



Universiteit  
Leiden  
The Netherlands

**From Concerns to Action: Triggering Institutional Change: A study of how environmental and health concerns surrounding Tata Steel Nederland triggered change in governance in the Netherlands**

Wolters, Anne-Jolijn

**Citation**

Wolters, A. -J. (2024). *From Concerns to Action: Triggering Institutional Change: A study of how environmental and health concerns surrounding Tata Steel Nederland triggered change in governance in the Netherlands.*

Version: Not Applicable (or Unknown)

License: [License to inclusion and publication of a Bachelor or Master Thesis, 2023](#)

Downloaded from: <https://hdl.handle.net/1887/3762136>

**Note:** To cite this publication please use the final published version (if applicable).

# **From Concerns to Action: Triggering Institutional Change**

*A study of how environmental and health concerns surrounding Tata Steel Nederland triggered change  
in governance in the Netherlands*

**Anne-Jolijn Wolters**

MSc Public Administration: International and European Governance  
Faculty of Global and Governance Affairs, Leiden University

Thesis supervisor: Dr. Fabio Bulfone

March 8, 2024

Word count: 19,263



**Universiteit  
Leiden**

## Abstract

This thesis delves into the intricate landscape of (green) industrial policies, focusing on Tata Steel Nederland (TSN) and its governance within the Netherlands from 2009 to 2023. Against the backdrop of global sustainability imperatives, the study navigates the evolving paradigm of industrial policies in response to climate challenges. As the manufacturing sector, particularly steel production, stands pivotal in achieving emission reduction targets, the research unravels the change in governmental rhetoric and policy outcomes towards TSN. This thesis addresses change surrounding TSN governance, injecting agency into Historical Institutionalism (HI) analysis and considers three pressures — expert knowledge, mobilisation, and salience — collectively to address existing research gaps. HI provides the theoretical lens, supported by agency to address the theory's limitations. The directional flow of pressures, from the communicative to the coordinative policy sphere, elucidates the role of actors in inducing institutional changes. A process-tracing case study methodology is employed and the research analyses governmental documents, health reports, news articles, and interviews to trace the unfolding changes in TSN's governance. The empirical findings show a departure from historical patterns, marked by the *maatwerkafspraken*, as well as increased monitoring and enforcement mechanisms to ensure the company adheres to the new green industrial vision of the Netherlands. The findings indicate a necessity of coexisting pressures—expert knowledge, mobilisation, and salience—to trigger change. The absence of any one pressure prompts dynamic equilibrium in favour of the powerful interests of TSN, emphasising the need for high pressure in the communicative policy sphere.

Key words: green industrial policy, historical institutionalism, change, pressure, communicative and coordinative policy sphere

# Table of contents

|   |           |
|---|-----------|
| <b>1. Introduction</b>  | <b>5</b>  |
| <b>2. Literature review</b>   | <b>9</b>  |
| 2.1 <i>Industrial policy</i>  | 9         |
| 2.2 <i>Green industrial policy</i>  | 10        |
| 2.3 <i>Industrial policy in the steel sector</i>                                      | 11        |
| 2.4 <i>Industrial policy in the Netherlands</i>                                       | 12        |
| 2.5 <i>Green polder model in the Netherlands</i>                                      | 12        |
| <b>3. Theoretical framework</b>   | <b>14</b> |
| 3.1 <i>Historical institutionalism: Institutions and institutional development</i>    | 14        |
| 3.2 <i>Institutional change</i>   | 17        |
| 3.3 <i>Agency in HI</i>   | 18        |
| 3.4 <i>Drivers of institutional change</i>  | 20        |
| <b>4. Methodology</b>   | <b>25</b> |
| 4.1 <i>Case selection</i>   | 25        |
| 4.2 <i>Process tracing</i>  | 26        |
| 4.3 <i>Causal mechanisms</i>  | 27        |
| 4.4 <i>Data collection</i>  | 27        |
| 4.5 <i>Analytical procedure</i>   | 30        |
| <b>5. Results</b>   | <b>33</b> |
| 5.1 <i>Cause: Tata Steel's unique position and high emission levels</i>               | 33        |
| 5.2 <i>Causal mechanism 1: communicative policy making sphere</i>                     | 36        |
| 5.3 <i>Causal mechanism 2: coordinative policy-making sphere</i>                      | 46        |
| 5.4 <i>Outcome: Institutional developments</i>  | 49        |
| <b>6. Analysis</b>  | <b>56</b> |
| 6.1 <i>Expert knowledge, mobilisation and salience must coexist to trigger change</i> | 56        |
| 6.2 <i>Agency is instrumental in explaining institutional change</i>                  | 61        |
| <b>7. Conclusion</b>  | <b>63</b> |
| <b>Reference list</b>   | <b>65</b> |
| <b>Appendix</b>   | <b>76</b> |

## List of abbreviations

| <b>Abbreviation</b> | <b>Definition</b>  |
|---------------------|--|
| CO <sub>2</sub>     | Carbon dioxide   |
| DI                  | Discursive Institutionalism  |
| DSB                 | Dutch Safety Board   |
| EU                  | European Union   |
| EoP                 | Expression of Principles   |
| GGD                 | Gemeenschappelijke Gezondheidsdienst (Municipal Health Service)  |
| HI                  | Historical Institutionalism  |
| JLoI                | Joint Letter of Intent   |
| OD NZKG             | Omgevingsdienst Noordzeekanaalgebied (Environment Service Noordzeekanaalgebied)                          |
| OM                  | Openbaar Ministerie (Public Prosecutor's Office)   |
| PET                 | Punctuated Equilibrium Theory  |
| PT                  | Process tracing  |
| RIVM                | Rijksinstituut voor Volksgezondheid en Milieu (National Institute for Public Health and the Environment) |
| TSN                 | Tata Steel Nederland   |
| WRR                 | Wetenschappelijke Raad voor het Regeringsbeleid  |

# 1. Introduction

Global sustainability challenges to address climate change are underscored by ambitious agreements such as the Paris Agreement and the European Green Deal. Climate tipping points represent critical thresholds within the climate system, beyond which irreversible and perilous consequences ensue, posing serious implications for humanity. Triggering tipping points leads to significant, policy-relevant impacts, including substantial sea level rise from collapsing ice sheets, dieback of biodiverse biomes and carbon release from thawing permafrost. The Intergovernmental Panel on Climate Change's Sixth Assessment Report warns that breaching these thresholds becomes increasingly probable as temperatures rise above preindustrial levels, with the 'Paris range' of 1.5-2°C signalling heightened vulnerability (Armstrong McKay et al., 2022). The gravity of these findings reinforces the need to achieve sustainability goals to mitigate global warming and foster a healthier environment.

In line with these global initiatives, the current Dutch Klimaatakkoord (Climate Agreement) has been introduced. It is a package of measures and agreements between businesses, civil society organisations, and governments, which sets ambitious targets for greenhouse gas reduction: 49 percent by 2030 and 95 percent by 2050, relative to 1990 levels (Government of the Netherlands, 2019). For industry, a CO<sub>2</sub> reduction target of 14.3 Mton, in addition to the existing policy of 5.1 Mton, has been set to be achieved by 2030 (Climate Council, 2018). Attaining emission reduction targets is closely tied to the manufacturing industry, where the Dutch government wields great power to shape these sectors through industrial policy (IP). IP is defined as “*any type of intervention or government policy that attempts to improve the business environment or to alter the structure of economic activity toward sectors, technologies, or tasks that are expected to offer better prospects for economic growth or societal welfare than would occur in the absence of such intervention*” (Warwick, 2013, p.16). Key industries can be targeted to bolster growth and enhance competitiveness for strategic purposes, both nationally and internationally, but the government also has the capacity to steer production towards new sustainable pathways. Green IP will be pivotal to meeting global, European and national climate goals. This raises societal questions on which sectors need to reduce emissions, how this should be achieved and the role of the government.

In the 2021 coalition agreement, the Dutch cabinet introduced a new IP called *maatwerkafspraken*, involving binding bilateral agreements between the government and the ten to twenty largest industrial polluters. This tailor-made approach targets an additional 1 to 1.9 Mton CO<sub>2</sub> reduction by 2030, aiming

for a green transition in the sector and preventing companies from relocating (Adriaansens, 2023). The manufacturing industry, particularly steel, plays a crucial role in meeting these targets. Steel is an indispensable material for critical societal infrastructures and emerging low-carbon technologies, but demands concerted efforts towards green industrial policies. Recognised as a strategic industry pivotal for both economic and social development, steel manufacturing has historically held a prominent position on governmental agendas, regularly falling under the purview of industrial policies. However, a paradigm shift is evident as the industry increasingly becomes subject to a new wave of policies — green industrial policies — designed to align with sustainability goals. The importance of transformative change within the steel sector is therefore paramount in achieving ambitious environmental objectives.

A case where significant industrial change can be observed is Tata Steel Nederland (TSN). TSN plays a pivotal role in sustaining the economic fabric of the region through job creation and economic stability. Yet despite its noteworthy economic significance and pioneering advancements in steel production, TSN holds a large environmental footprint with consequential health implications for the surrounding community. It ranks as one of the world's most carbon-efficient steel companies concerning blast furnaces, while simultaneously earning the distinction of being the largest industrial emitter of CO<sub>2</sub> in the Netherlands (Keys et al., 2019). It emitted 5.8 Mton CO<sub>2</sub> in 2022, contributing approximately seven percent to the country's overall CO<sub>2</sub> emissions (NEa, 2023; BNNvara, 2023). Consequently, the Dutch government is currently in the final phases of formalising a tailor-made agreement with TSN, in addition to the steel plant's target reduction of 5 million tons in CO<sub>2</sub> emissions by 2030.

TSN has a longstanding historical track record with unlawfully high emissions without government interventions. However the company now finds itself in a period of change, subject to the *maatwerkspraak*, marking a significant departure from the status quo. Change is evident by ongoing governmental discussions leading towards a Joint Letter of Intent (JLoI). Within this agreement, the aspirations outlined in the Expression of Principles (EoP) are translated into concrete intentions and agreements, encompassing binding commitments from both the government and the company. The agreement encompasses additional CO<sub>2</sub> reduction goals, as well as the mitigation of nitrogen and noise, and initiatives to enhance overall living conditions and air quality (Rijksoverheid, 2022). It captures the shared ambitions of the government and the company for clean, green, and circular steel production in the IJmond region. Additionally, monitoring and enforcement mechanisms such as non-compliance fines are also being deployed, diverging from the longstanding historical patterns where violations did not

have repercussions. In short, the change we seek to explain is signified by governmental actions regarding TSN in the form of formal agreements, either being discussed or formulated, and enforcement mechanisms to ensure the company adheres to the new green industrial vision of the Netherlands.

The Dutch government is tasked with the difficult objective of supporting the industry in green transitions, while also having a vested interest in keeping them in the country. Despite the significant impact of Tata Steel on the carbon footprint in the Netherlands, surprisingly few studies have explored the reasons behind the recent sudden shift towards TSN and why it has taken so long for the government to induce change. As the shift from conventional to green industrial policies in the Netherlands unfolds, the exploration of (green) industrial policy in the steel manufacturing sector prompts an examination of how historical institutionalism's (HI) key concepts intersect with this transition (Aiginger, 2012). This thesis analyses change in governance through the lens of HI, which considers critical junctures and long periods of stability as key elements shaping institutional development (Capoccia & Keleman, 2007). However, Schmidt (2011b) points out that the lack of account of agency is a key limitation in HI. In line with DiMaggio (1988), we inject agency into the analysis by proposing that the directional flow of pressures primarily travel from the communicative sphere with political actors to the coordinative sphere with policy actors (Schmidt, 2023). Actors can apply pressure on the policy-making institution through different tactics, in which mobilisation, expert knowledge and salience is frequently cited in the literature. However, existing research typically focuses on one or two pressures to elucidate change. This is limited in explaining the underlying reasons for change, as HI asserts that significant pressure must be present in a system to induce change (Rocco & Thurston, 2014). Therefore, we adopt a more comprehensive approach by considering the combined pressure of expert knowledge, mobilisation, and salience in the communicative sphere as a trigger of institutional change. In sum, this thesis is academically relevant by addressing change surrounding TSN governance, injecting agency into the analysis and considering three pressures — expert knowledge, mobilisation, and salience — collectively to address existing research gaps.

In light of these identified gaps, this thesis aims to explain why change in the Dutch government's rhetoric and policy outcomes towards TSN can currently be observed, despite its historical pattern of high emissions, and why such change was not evident previously. As such, this thesis seeks to answer the following research question: *How have increasing health and environmental concerns regarding TSN triggered institutional change in the Netherlands during the period 2009-2023?* The main findings show that all three types of pressure —expert knowledge, mobilisation, and salience — must coexist to trigger



change, as a singular pressure or a combination of two proves insufficient to compel policymakers to enact meaningful shifts. Otherwise this would lead to dynamic equilibrium as the policy system self-corrected towards the powerful interests of TSN, suggesting that substantial deviations from the status quo are unlikely (Baumgartner & Jones, 1993). Significant pressure in the communicative sphere is thus important to make policy makers enact change.

This research is structured as follows. The next section delves into the literature to explore the concepts of (green) industrial policy, followed by the theoretical framework, which includes discussions on HI, institutional change and its drivers. Next, we discuss the methodology that is employed. Subsequently, we present the empirical findings derived from the process-tracing case study. These results are then analysed in the following chapter. Finally, the thesis is wrapped up with a discussion and conclusion.

## 2. Literature review

### 2.1 Industrial policy

Industrial policy has resurfaced in policy analyses and debates over the past decade (Uyarra et al., 2020). Particularly developed economies are experiencing a revival in IP, as exemplified by Popa (2024) in the UK using text-as-data evidence from government policy papers. A core assumption to IP is that free markets do not produce the most optimal outcomes. The theoretical underpinning of IP posits that selective state intervention is essential for facilitating rapid economic progress (Haar, 2014). More specifically, it is defined as “any type of intervention or government policy that attempts to improve the business environment or to alter the structure of economic activity toward sectors, technologies, or tasks that are expected to offer better prospects for economic growth or societal welfare than would occur in the absence of such intervention” (Warwick, 2013, p. 16).

During the peak of neoliberalism, industrial policies were largely sidelined in favour of market-centric Washington consensus policies (Serra & Stieglitz, 2008). The conventional viewpoint argued for market efficiency, negating the need for government intervention in resource allocation or technological decisions. Even in cases where markets were perceived as inefficient, skepticism existed regarding the government's ability to rectify the situation. However, crises exposed potential inefficiencies in markets, leading to a consensus that robust government intervention, including providing support to specific firms and industries, was indispensable to prevent potential collapses in the market economies of the USA and Europe. As a result, there has been a recent resurgence of interest in and endorsement of industrial policies, even by institutions like the World Bank (Stieglitz et al., 2013).

There is a general consensus amongst academic scholars regarding the idea of a 'new' or 'systemic' IP rooted in new technologies, aimed at supporting society's long-term objectives (Rodrik, 2004a; Aghion et al., 2011; Aiginger, 2007, 2012). Yet there are nuanced differences in perspectives. For instance, Rodrik (2014) takes a broad approach: IP should exclusively be employed to advance long-term interests that are intrinsically linked to societal needs. It should not be used for short-term objectives, like job preservation in struggling areas or addressing economic downturns, but rather benefit the society as a whole. Aiginger et al. (2013) similarly emphasises a long-term perspective linked to broader societal needs, requiring a vision for the economy in the next 20 or 30 years. This vision should be systematic, driven by competition, and guided by goals extending beyond GDP, including factors such as income, social objectives, and ecological sustainability.

A narrower scope is put forward by Aghion et al. (2011), who contend that IP is crucial to avert lock-in scenarios, where investments are committed to outdated technologies and established programs. Yet, manufacturers of environmentally harmful products often continue to innovate and invest in the same detrimental direction. IP is thus tasked to prevent conservative path-dependent decisions. This has led to the resurgence of the debate surrounding the suitable role of governments in the economy when addressing major challenges, like climate change (Terzi et al., 2023). This raises the question as posed by Aiginger (2014): are industrial policy and climate policy partners or adversaries?

## **2.2 Green industrial policy**

The pressing concerns of adverse climate effects, famously characterised by Stern (2008, p. 1) as the result of "*the most significant market failure the world has ever seen*", have generated a renewed and urgent impetus for the development of effective IP (Aiginger, 2012). As previously stated, developed countries, such as the Netherlands, are exploring new industrial policy models that account for sustainability goals. Research and policy in industrialised countries are experiencing a symbiosis towards green industrial policies (Altenburg & Rodrik, 2017), a "low carbon industrial strategy" (Busch et al., 2018) or a "green entrepreneurial state" (Mazzucato, 2015).

The emerging concept of green IP has gained prominence in recent years, marking a departure from conventional IP approaches by explicitly integrating environmental goal (Rockström et al., 2009). It involves government intervention to expedite the transition of the economy towards environmental sustainability (Pegels & Lütkenhorst, 2014). The focus is on steering economic trajectories away from traditional industries, such as steel manufacturing, toward environmentally sustainable alternatives. Essentially, any policy aimed at aligning a country's economic structure with sustainable development requirements within established planetary boundaries falls under the umbrella of green industrial policy. This perspective highlights the need of government intervention to address the shortcomings of market forces in effectively tackling environmental challenges, thereby reinstating the central role of public policy in formulating and achieving societal objectives (Pegels & Lütkenhorst, 2014; Luetkenhorst et al., 2014).

More specifically, the International Institute for Sustainable Development (2013) explains that green industrial policy is different from its traditional variant in three distinct manners: the scale of intervention, the time span and an absence of a competitive market. First off, government intervention

needs to be substantial in green industries, as these industries heavily rely on government policies to establish their markets, with the size of potential future markets primarily shaped by forthcoming government policies. For instance, a significant market size might be essential to offset investments in manufacturing facilities or offer incentives for research and development investments (Namh & Steinfeld, 2014). Green industrial policies can incentivise industries to embrace research and eco-friendly technologies, while the feasibility of future measures such as carbon taxes is contingent on current investments shaping the availability of alternative fuels. Secondly, the duration of industrial policies may be required for a long period of time, contingent on the type of market failure. If the market failure is enduring and cannot be resolved through market-based measures, industrial policies would similarly have to endure to maintain equitable conditions. Thirdly, the lack of a competitive market complicates the practical assessment of green industrial policy based on performance. The global immaturity of the sector and the lack of coordinated industrial policies worldwide lead to several distortions (Schwarzer, 2013).

The shift from conventional industrial policy towards green industrial policies represents a recent development, especially pertinent for technologically advanced economies such as the Netherlands, as they strive to meet climate targets. Given that the steel sector is deeply embedded in societal and economic structures, this transition will have profound implications. This prompts an exploration of the relationship between (green) industrial policy and the steel manufacturing sector.

### **2.3 Industrial policy in the steel sector**

Historical evidence from technologically advanced economies shows that governments wield great power to shape industries and foster sustained economic growth and transformation (Chang, 2002; Mazzucato, 2013). Governments strategically target key industries to enhance growth and improve competitiveness for strategic purposes, both nationally and internationally. This includes steel, which is an essential material for critical infrastructures in society like buildings, transportation, machinery, and equipment, and has a newfound role in the production of low-carbon technologies, such as wind turbines and electric vehicles. Steel manufacturing is thus considered a fundamental industry that is conducive to economic and social development. Considering the importance of this industry, it historically holds a high position on governmental agendas and is often subject to IP. The industrial transformation of existing sectors, particularly in achieving deep decarbonisation emerges as a crucial component of green industrial policy, reflecting the imperative shift toward sustainable practices (Kushnir et al., 2020).

The historical trajectory of Dutch IP has been marked by shifts in focus and ideology, portraying the state's role swinging between interventionist approaches and laissez-faire principles. Despite this fluctuation, there is limited research specifically examining IP within the context of the steel sector in the Netherlands. This thesis positions itself within this research gap, directing its attention to the emergence of green industrial steel policy in the country. The developments in this sector are societally relevant by underscoring the pressing need for sustainable economic practices. As the Netherlands undergoes a transition from conventional to green industrial policies in the steel manufacturing sector, this prompts an in-depth exploration of how key concepts of historical institutionalism intersect with this shift. This analysis focuses on understanding institutional change and the diverse pressures that drive these transformations.

## **2.4 Industrial policy in the Netherlands**

As previously explained, IP has witnessed a resurgence in the past decade, experiencing a renewed interest in the Netherlands as well. Policymakers recognise that relying solely on regulations to achieve climate goals faces strong opposition from lobbying efforts by companies. Taking a carrot-approach, as illustrated by Mildenerger's (2020) study in the United States, acknowledges the significant vested interests in the coal industry on both the left and right, making regulatory measures challenging. Furthermore, policy diffusion likely contributes to the prevalence of IP in developed countries, as suggested by Gilardi and Wasserfallen (2019). The resurgence of IP has been scrutinised in various nations, including the UK by Popa (2024) and the US by Mildenerger (2020), suggesting the possibility of IP diffusion leading to its revival in the Netherlands. However, reviews of IP in the Netherlands remain limited and outdated. For instance, Zegveld (1977) examined government policy development for industrial development, while De Ruijter and Batten (1999) provided a fifty-year overview discussing the legitimacy of historical motives. With IP experiencing a resurgence both globally and in scholarly discourse, this study will contribute to the current developments of green industrial policy in the Netherlands. This while recognising that the reasons behind IP's revival in general surpass the scope of this research.

## **2.5 Green polder model in the Netherlands**

Amidst the backdrop of IP, many societies are searching for new institutional frameworks to address strategic environmental concerns. The polder model, a longstanding socio-economic decision-making framework that is unique to the Netherlands, was originally designed to foster collaboration between industry and trade unions. It has evolved into a platform for constructive dialogue transcending the

traditional capital-labor divide by fostering a collaborative pursuit of the 'common good'. Although it may not fully explain economic success, the model provides a basis for relationships and cooperative action during emergencies (De Waal, 1998).

In environmental policy, the green polder model distinguishes itself with its diverse composition, involving various social organisations and sectional interests. Recognising the interconnectedness of environmental issues on multiple territorial levels, the green polder model appears more flexible than its socio-economic counterpart. The central idea is that broad support from organised interest groups is crucial for political decision-making on strategic issues in environmental policy. This model emphasises mobilising these groups as knowledge sources. However, it acknowledges a power asymmetry where influential parties may exploit relationships to support predetermined alternatives (Glasbergen, 2002). In a liberal democratic society, the government's role is to ensure the general interest, organising transparent public debates that represent all relevant interests and maintain balance.

Applying the green polder model to address environmental and health concerns related to TSN offers a framework for cooperation among stakeholders in crafting sustainable tailor-made solutions for the steel industry. However the powerful position held by TSN and its socio-economic interests conflict with environmental and health considerations. This power dynamic adds complexity to the application of the green polder model, raising questions about how the interests of a dominant player like TSN can be reconciled with broader environmental objectives within the institutional framework. IP plays a central role in driving the necessary changes in TSN's emission patterns. The mechanisms through which this change is triggered will be elucidated in the theoretical framework.

### 3. Theoretical framework

The upcoming section will delve into various concepts crucial for addressing the research question. Firstly, historical institutionalism will provide a theoretical lens for understanding how change emerges in a political system. Secondly, institutional change will be explored further to elucidate the mechanisms driving change within a system, with a particular focus on the punctuated equilibrium theory as a tool for explaining shifts in IP. To enrich our understanding of change, the concept of agency will be incorporated. Lastly, the chapter will discuss key pressures that must coexist in order to compel policy makers change their stance towards TSN.

#### 3.1 Historical institutionalism: Institutions and institutional development

Democratic political life is ordered by institutions, which are defined by March and Olson (1989, 1995) as a relatively stable collection of rules and norms that shape the way in which actors behave and regulate the interactions between individuals and that organise the appropriate course of action as part of a group, organisation or society (Peters, 2019a; Scharpf, 1997; March & Olson, 1989). A country's IP is the product of its historical and contextual struggles. This tension arises from the contrast between a nation's past, characterised by its existing industrial structure and institutional framework, and its envisioned future which is shaped by the government's industrial vision. Therefore, the historical evolution of policies is crucial for understanding the outcomes of IP within a given system (Noman & Stieglitz, 2017).

Historical institutionalism (HI) is a theoretical perspective that seeks to elucidate the processes over time that contribute to the establishment and perpetuation of stability and change (Skocpol & Pierson, 2002). HI holds the fundamental premise that '*institutions matter*' (Hall & Taylor, 1996). The theory's unique contribution is its emphasis on the enduring impact of institutions on actor behaviour over time. As summarised by Pierson (1996): "*Historical Institutionalism is historical because it recognises political development as a temporal process unfolding over time and institutionalist because it emphasises that many contemporary implications of these temporal processes are embedded in institutions, encompassing formal rules, policy structures, or norms*" (p. 126). Institutional development revolves around elucidating both the change and stability of institutions within social, political, and historical frameworks. It manifests as a product of an organisation's adaptations to the dynamic exigencies posed by its external environment (Selznick, 1996).

Steinmo and Thelen (1992) assert that HI represents how political conflicts are mediated by the institutional setting in which they occur. Consequently, it is essentially viewed as a theory of action constrained by institutions (Campbell, 1998). However, HI is not solely focused on the impact of institutions on individual choices or strategies. According to Thelen (2002), most historical institutionalists emphasise the significance of institutions in shaping not only individual decisions but also the expression of interests, particularly collective interests, and are concerned with how institutions are created and evolve over time.

This theory is underscored by three main characteristics: (1) it addresses big, substantive questions; (2) analyses processes over time; (3) pays attention to macro contexts and interactions between institutions. This thesis maintains that HI, with its emphasis on concepts such as path dependency, time, continuity and change, critical junctures, unintended consequences, power asymmetries and increasing returns processes serves as a valuable theoretical lens in explaining the *why* and *how* of changes in public awareness and perception of environmental and health concerns related to Tata Steel's pollution activities and their impact on the regulatory landscape in the Netherlands. The three core concepts of path dependency, power asymmetry, critical junctures and increasing returns processes can be employed to explain how systems emerge and evolve.

As HI is primarily focused on the unfolding of institutional processes over time (Pierson, 2004), it highlights the concept of path dependence and underscores the unintended outcomes resulting from institutional design (Hall & Taylor, 1996; Steinmo & Thelen, 1992). *Path dependency* elucidates the establishment and maintenance of a status quo, creating stability within a system. It delves into the dynamics of self-reinforcement, often termed as increasing returns by economists. Initiated by a critical juncture, this process sets in motion feedback mechanisms where the consequences of a particular action not only trigger subsequent actions but also form a self-reinforcing loop, resulting in the recurrent occurrence of a specific pattern (Skocpol & Pierson, 2002). As this pattern solidifies, resistance to change emerges due to the associated high costs and the dependency it generates. Typically, the government, old industrial policy and its supporters tend to favour the status quo. Political rebound effects often occur as the transition begins and initial easy achievements are realised (Siderius & Poldner, 2021). The high costs and dependency can lead to *lock-in effects*, wherein an entity becomes committed to a suboptimal or *inefficient course of action*, even when superior alternatives are available (Skocpol & Pierson, 2002).



Historical institutionalists contend that institutions are the product of conflicts that fundamentally mirror *power imbalances*. While the examination of power is not exclusive to HI, this perspective particularly focuses on how institutions impact political results by enabling the organisation of specific groups while simultaneously disrupting others (Avelino & Rotmans, 2009). This influence is not solely through coalition formation mechanics but also pertains to how institutions affect the ability of groups to identify shared interests (Thelen, 2002). In the context of IP, power imbalances influence which industries receive support, the nature of interventions, and the distribution of resources. Institutions, formed and reformed through conflicts and power struggles, become instrumental in steering the developmental direction of industrial policies (Mahoney & Thelen, 2002).

The unfolding of history, according to HI, is a composite of critical junctures and long periods of stability. *Critical junctures* refer to periods of contingency when the typical constraints on action are lifted or eased (Capoccia & Keleman, 2007). They represent pivotal moments determining the developmental direction of institutions. Scholars have characterised them as periods when a particular option is chosen from a range of alternatives, thereby directing future movement along a specific trajectory (Mahoney & Schensul, 2006). Building on this, Katznelson (2003) contends that critical junctures can create opportunities for historical actors to change the trajectory of development. Alternatively, they are described as situations where the range of plausible choices available to powerful political actors significantly expands, and the consequences of their decisions become potentially momentous (Coppacia & Kelemen, 2007). Critical junctures in history have a profound impact on the formulation and direction of industrial policies. The decisions made during these crucial moments can shape the trajectory of industrial development, influencing the choices of industries to champion, the allocation of resources, and the overall orientation of economic policies.

*Increasing returns processes* are self-reinforcing or positive feedback mechanisms that contribute to stability within a system. The difficulty of reversing a choice, the enhanced profitability with each step down a particular path, and the concept of lock-in highlight the challenges associated with deviating from an established trajectory. Small events can have big consequences, because early events have a large effect and are partly random, many outcomes are possible. This means that existing institutions may be virtually impossible to change. And therefore lock-in effects become larger (Page, 2006; Pierson, 2000).

A focus on HI is productive for the study of institutional development surrounding the debate on Tata Steel because it provides insights into the institutional policy developments. Additionally, it is well suited to explaining change (and stability) within a system. However, this perspective has encountered criticism, pointing out that it insufficiently addresses the effect of ideas on outcomes and institutions (Campbell, 1998; Schmidt, 2010a). While not dismissing the HI approach, this critique holds significance; however, a comprehensive examination of it exceeds the scope of this research (Lockwood et al., 2017).

### **3.2 Institutional change**

Brunsson (1989) explains that change is a part of the life cycle of institutions. In fact external impulses can lead to change by means of processes of learning and adaptation from an environment (March & Olsen, 1989). Changes in an environment are both a set of opportunities for an institution as a threat to the status quo. This perspective emphasises the random nature of change, opposed to other perspectives that focus on change as highly purposive (Peters, 2019b).

Early research on institutional change held the common assumption that social and political institutions tended to be generally stable, undergoing changes primarily in response to significant external pressures characterised by abrupt, discontinuous, and easily noticeable breaks from the past (Rocco & Thurston, 2014). As rules and procedures institutionalise over time, institutions exhibit an inherent resistance to change (Huntington, 1996). Consequently, there is a potential danger of continuing support when it is unnecessary or evident that the policy has failed, as well as a risk of prematurely withdrawing support (Terzi et al., 2023). The persistence of a firmly established status quo is determined by reasons of structure, culture, economic interest, and psychology.

The Punctuated Equilibrium Theory (PET), introduced by Baumgartner and Jones (1993), posits that public policy typically undergoes incremental evolution, but the rate of change can swiftly escalate when a significant societal event occurs, leading to profound shifts in public policy. Policy issues, like emissions from Tata Steel, often materialise as a policy monopoly. This is where a relatively restricted group of actors consistently concentrates on the matter and share a common understanding of the policy problem, referred to as a *policy image* (Baumgartner & Jones, 1993). Challenges to this policy image, such as emerging evidence, are routinely disregarded or downplayed within the current subsystem, generating negative feedback. Consequently, the subsystem reaches equilibrium, contributing to stability in outcomes (Beyer et al., 2022). The overarching pattern involves a protracted period characterised by

gradual and incremental policy changes, succeeded by an external shock to a policy monopoly. This shock (referred to as punctuations), occurring in political processes related to policy issues, triggers a tipping point marked by sharp and explosive policy changes. Subsequent to this punctuation of equilibrium, policy patterns exhibit positive feedback, ushering in a new phase characterised by long-term and relatively incremental policy changes (Baumgartner & Jones, 1993).

However the research has shown that varieties in institutional change do not always align with the expectations of punctuated equilibrium models (Steinmo & Thelen, 1992). Major studies by Thelen (2004), Mahoney and Thelen (2010), Pierson (2004) and Hacker (2004) have demonstrated that institutions may also shift without exogenous pressure, and do so gradually. The theory of gradual change has been introduced to explain the more gradual evolution of institutions once they have been established, which is often overlooked by institutionalist studies (Mahoney & Thelen, 2010). Yet, deliberate incremental decisions in policymaking enable the reversal of undesirable consequences, maintaining a dynamic equilibrium with the environment. In a democratic system that facilitates group mobilisation and counter-mobilisation, dynamic equilibrium is observed. When the system deviates from balance, it self-corrects, striving for equilibrium between democratically organised interests and government policy outputs. This perspective is conservative as it suggests that significant deviations from the status quo are improbable. Therefore it fails to explain why significant change in a small time-frame occurs (Baumgartner & Jones, 1993).

### **3.3 Agency in HI**

Historical institutionalism emphasises the chronological progression of stability and change within institutions. However institutional development does not occur without the intervention of interest groups. DiMaggio (1988) thus contends that institutional analyses must include agency to explain the dynamics of institutional change. While agency, in the form of interest groups, has been a central indicator in empirical research within historical institutionalism, its conceptual role has not always been clearly delineated. Recent advancements in the field emphasise the need for more actor-centred approaches to address this conceptual gap (Mahoney & Thelen, 2015; Fioretos et al., 2016), while Schmidt (2011a) advocates for the endogenisation of agency to explain the dynamics of both institutional change and continuity.

The emergence of agency relies on specific conditions dictated by the configuration and structure of institutions. Aligned with all institutional theories, the proposed conceptual framework asserts the

supremacy of structure over agency. Advancing the coalitional shift within historical institutionalism, Emmenegger (2021) posits that agency is instrumental in establishing and maintaining social coalitions that either uphold or challenge institutions. Simply because in the absence of agency, no coalition can be forged or sustained, and without a supportive coalition, no institution can endure. However collective action dilemmas present significant challenges to the activities associated with forming and sustaining coalitions. Within the framework of historical institutionalism, this actor-centred coalitional perspective not only provides a substantial role for agency but also explains why institutional stability persists despite agency.

Yet this explanation falls short in explaining institutional change (Hall & Taylor, 1996). Agency matters most in periods of exogenous critical junctures, and in such times is often considered surprisingly unconstrained (Capoccia, 2015). Beyond these critical junctures, the scope for agency is limited (Emmenegger, 2021). In line with Schmidt (2011b, p.8), providing more room for the discursive activities of agency helps to overcome the limitation where “*agency is the historical institutionalists’ Achilles heel*”.

Lending concepts from discursive institutionalism (DI) can support HI, which faces difficulty in explaining the dynamics of change due to its focus on historical rules and regularities (Schmidt, 2011b). DI not only looks at the communication of ideas, but also the institutional context in which ideas are shared. Ideas shared in both the communicative and cooperative policy spheres are crucial for explaining institutional change. These discursive abilities involve people's capacity to think critically about existing institutions, engage in communication, and deliberate for potential reform (Schmidt, 2010b). The communicative sphere entails political actors (e.g. the media, interest groups, social movements) of which their discourses have communicative force, and their collective actions make a difference. On the other hand, agents in the coordinative policy sphere are generally the actors involved in the policy process, including policymakers or government officials and experts. The directional flow of these discursive interactions can take various forms: from top-to-top as political and/or technical elites engage in dialogue, top-down through the impact of elites on the public, or bottom-up through the discourse and actions of civil society, social movement activists, or ordinary individuals, which is often the case for environmentalists (Schmidt, 2023). As such, this thesis will fill the knowledge gap by injecting agency into historical institutionalism by including the role of key actors, as well as communicative and coordinative policy spheres.

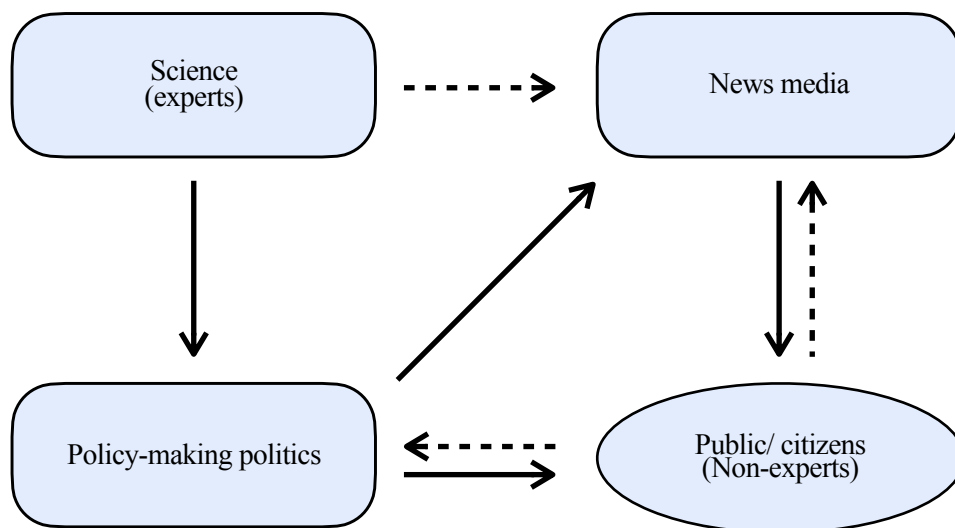
### **3.4 Drivers of institutional change**

The environment surrounding a subsystem is in a constant state of flux, and eventually, external forces surpass the established policy monopoly and bring rise to punctuations. Change agents, driven by the motivation to reshape institutional frameworks and empowered by their available resources for effecting such changes, can exert influence on prevailing policy institutions (Ferrara, 2022). Implementation of IP for sustainable development is a process encompassing various stakeholders from the private and public sectors and civil society. As Rodrik (2014) discussed, there is a need for continuous collaboration and dialog that would capitalise on feedback from sequential policy implementation.

The primary objective of IP is to establish favourable conditions that boost industrial competitiveness, leading to an enhancement of living standards within society (Bivens, 2023). However, there is a shifting paradigm where environmental considerations are progressively being considered when gauging the overall quality of life. This shift is notably observed in the increased recognition of the impact of pollutants and hazardous substances on public health (Streimikiene, 2015). Consequently, as environmental goals ascend to greater prominence within society, a critical challenge emerges: how to navigate and harmonise the diverse opinions surrounding what is deemed the optimal outcome for the entire community (Shrivastava et al., 2020). Environmental complexity is a strong moderator of the effect of IP. Yet environmental considerations remain understudied within the existing literature. This leads to the question of how IP is subject to change and who has influence over decision-makers in shaping these policies.

IP targeting specific sectors or technologies, like steel, are susceptible to interest group capture (Albareda et al., 2023). Academic literature increasingly highlights the influence of interest groups (e.g. Binderkrantz et al., 2015; Dür et al., 2015; Klüver, 2011; Mahoney, 2007; Tallberg et al., 2018). Mahoney and Thelen (2010) contribute by introducing the concept of opportunists — actors with ambiguous preferences toward institutional continuity. These individuals neither actively uphold existing institutions nor strive to alter established rules, instead exploiting available opportunities within the current system to achieve their objectives. Opportunists, often de facto allies of those supporting the institution, play a role in elucidating why challenging an institutional status quo is frequently more challenging than defending it. However, when opportunists do advocate for change, they often adopt conversion strategies to reshape rules in ways unanticipated by their creators (Mahoney & Thelen, 2009).

The institutional model of science communication offers an explanation for how expert knowledge is utilised by actors to change policy. The model envisions a linear exchange of information, positing a directional flow from experts to non-experts. Experts provide governments with relevant knowledge to facilitate informed decision-making, while simultaneously policymakers communicate the rationale behind their decisions to the news media and the public, fostering democratic and open debates (see figure 1). In practice, the model materialises differently considering that the processes of scientific knowledge creation and evidence-informed policy-making are not straightforward transmissions or ‘translations’ of knowledge. Instead pushing something on or off the agenda involves a dynamic interplay where expert voices, influenced by scientific, governmental, and media institutions, become intricately interwoven with non-expert voices in an ongoing struggle for public consent (Van Dijk & Alinead, 2020; Tallberg, 2003; Princen, 2007).



*Figure 1. The institutional model of science communication (Van Dijk & Alinead, 2020)*

In line with the institutional model of science communication, it is posited that all three types of proposed pressures — expert knowledge, mobilisation, and salience — need to coexist in a system, as a single pressure or a combination of two is insufficient to compel policy-makers to enact change. As noted by Kelley and Simmons (2015), expert knowledge and mobilisation can influence domestic politics, while Culpepper (2010) contends that increased salience triggers policy responses and diminishes business power.

1. As policy decisions increasingly hinge on knowledge and evidence (Habermas, 2015), scholars suggest that **expert knowledge** can be strategically employed as 'ammunition' to substantiate organisational preferences (Weiss, 1986; Majone, 1989; Radaelli, 1995). Information has the potential to

question the appropriateness of established power structures and assess their effectiveness (Ferrara, 2022). Within DI, Schmidt (2008) introduces the concept of ideas as a catalyst for change, encompassing both structure and agency to offer an endogenous lens for comprehending change dynamics. Acknowledging a limitation in HI, this research concedes that institutions undergo changes aligned with prevailing perceptions, as suggested by Rothstein (2005). Interest groups can leverage expert knowledge to support preferences and to frame problems and solutions, influencing policymakers and the public (Campbell, 2002). Alternatively, policymakers may invoke expert knowledge to enhance legitimacy, adhering to an organisational institutionalist approach that emphasises agencies securing legitimacy to meet societal expectations (DiMaggio & Powell, 1991; Scott, 1991). The transfer and utilisation of conflicting knowledge, along with resulting policy adaptation, are often viewed as episodic and delayed rather than incremental and continuous, given the structurally embedded nature of partial problem perceptions and selective organisational attention (Daviter, 2015). This aligns with the concept of irregular punctuations in the policy process, as anticipated by the PET (Jones & Baumgartner, 2005). This study broadens its scope by valuing the informational context around TSN, contending that, when combined with other influential factors, expert knowledge contributes to an exogenous understanding of institutional change.

2. Secondly **mobilization** can cause a subsystem to draw substantial external attention unexpectedly (Schattschneider, 1960). As one group secures political advantage, other groups mobilise to safeguard their interests. In such scenarios, mobilisations undergo a negative-feedback process, where deviations from the current state of the system tend to be minimal (Baumgartner & Jones, 1993). Mobilisation can help regime opponents collectivise followers and disseminate information designed to delegitimise the status quo, displace the existing institutional rules and facilitate convergence toward a common goal (Ferrara, 2022; Zara & Delacour, 2021). Further, there has been a shift to recognising protesters as catalysts for change (Kende et al., 2016). Multiple researchers call to expand attention towards counter-movements that seek to justify the existing status quo or explain change (e.g. Becker, 2020; Osborne et al., 2019).

3. **Saliency** refers to the level of attention given to policy issues (Moniz & Wlezien, 2020). Interest groups influences saliency by shaping public opinion and expressing collective concerns (Voinea & Kranenburg, 2018). When a policy issue attracts a lot of attention, public officials are likely to be more cautious and adapt their decision-making process to avoid reputational issues and ensure the successful approval and implementation of the legislation (Junk, 2019). While there is evidence indicating that

heightened salience should lead to a policy response from the state, this outcome is not guaranteed (Bromley-Trujillo & Poe, 2020). Steinmo and Thelen (1992) for example, argue that "broad changes socioeconomic or political context" change the saliency of institutions, bringing some to the forefront of political discussion while others become latent or even forgotten. This suggests that in some cases more pressure is required to create change. Furthermore, Culpepper's framework underscores the advantages of managerial organisations under conditions of low political salience, termed 'quiet politics', as they wield greater influence. Conversely, as political salience rises, business power diminishes, as public concern becomes more influential in shaping policy outcomes (Culpepper, 2010).

It is posited that all three types of pressure need to coexist to bring about change, as a single pressure or a combination of two is insufficient to compel policy-makers to enact change. Otherwise this would lead to dynamic equilibrium, suggesting that substantial deviations from the status quo are unlikely. The three concepts have frequently been employed individually in the literature to explain how pressures on institutional systems, as well as being combined in duos to bridge gaps in the literature. For instance, Langley et al. (2018) connect expert knowledge and mobilisation by illustrating how knowledge can be mobilised to exert pressure on policy-makers and knowledge creators. Matson et al. (2016, p.122) assert that "*when knowledge is salient to the interests of actors in society... then knowledge becomes power,*" demonstrating the intersection of knowledge and salience to clarify pressure dynamics. Furthermore, Rasmussen et al. (2014) combine salience and mobilisation, suggesting that interest groups are more likely to mobilise on issues of high salience to citizens. So while previous studies have shown that these three concepts relate to one another, they have never been studied in threefold in the context of explaining change. This thesis bridges this gap by studying how the combined pressures of expert knowledge, mobilisation, and salience are collectively sufficient to induce change.

In light of this theory, the following hypothesis has been formulated: *If the expert knowledge utilisation, mobilisation and salience about an issue increase in the public, business power will diminish thereby opening up the policy-making space to the influence of other political actors and interest groups. As governments face heightened pressures, this will result in changes in government's rhetoric and policy outcomes.*

Following the identification of gaps in the existing literature, this thesis seeks to contribute to the academic debate in the following ways. First, despite the substantial impact of TSN on the carbon footprint in the Netherlands, there is a notable absence of studies elucidating the sudden change in policy



and governance towards TSN. This will be addressed by considering the emergence of green industrial steel policy, delving into the reasons behind these changes and the factors contributing to the timing of government intervention. This makes the contribution both empirical and theoretical by looking at TSN, and by looking at the relationship between the variables identified in the HI literature, respectively. Second, this thesis addresses an identified gap in HI, where the role of agency or the influence of key actors is insufficiently considered by injecting agency into the analysis. Thirdly, existing research often concentrates on one or, at most, two pressures on policy makers. To address this limitation, the thesis combines three pressures — expert knowledge, mobilisation, and salience — under the premise that substantial pressure is necessary to induce change in a system.

## 4. Methodology

An exploratory in-depth case study analysis of institutional developments surrounding Tata Steel emissions levels in the Netherlands has been conducted to explore *how* and *why* processes of institutional change in governance occur and unfold over time. This chapter outlines the methodology adopted for our study, focusing on process tracing (PT) and an analytical procedure that integrates theory-building within a single-case research design.

### 4.1 Case selection

In exploring the potential causal mechanisms that resulted in the tailor-made agreement with TSN, a single case study emerges as the most valuable method. This choice is grounded in the objective of deriving inductive insights into potential causal ideas that can elucidate the specifics of the case (Toshkov, 2016). Adopting a single-N case study approach provides a comprehensive narrative that chronicles the evolution of potentially pertinent causal conditions (Blatter & Haverland, 2012).

This least-likely case was chosen because of its importance and relevance to academic and social debate. The Netherlands has voiced their ambitions to reach national and European climate goals in pursuit of sustainability. As a result of sustainability challenges, the demands society places on government and business have changed. Many interests are present, and in a liberal democratic society the government is obliged to look after the general interest. The green polder model in the Netherlands serves as an example where stakeholders can exert pressure on policymakers within an institutionalised framework (Glasbergen, 2002). Historically, it has been a platform where interest groups frequently advocate for policy changes, with ample room provided for such activities. The government acknowledges that climate ambitions present significant economic opportunities for an open, innovative economy like that of the Netherlands, highlighting the intertwined environmental, social, and economic interests at play (Rijksoverheid, 2022). Dutch governments have traditionally exhibited skepticism toward state intervention, rendering it a case with unique features and experiences that make it less likely to align with prevalent government stances. This case will be used to probe for new explanations of how changes in governance are triggered. Failing the test does not necessarily disconfirm the theory but passing provides strong support for it (Collier, 2011).

The selected industry for study is the steel industry, which confronts significant challenges in meeting the EU's emission reduction targets. The environmental implications and concerns to achieving sustainability

and future resilience, makes the steel sector a suitable focus for an in-depth case study. As the largest steel producer and leading polluter in the Netherlands (NEa, 2023), TSN's pivotal position is further accentuated by the tensions emanating from its close proximity to densely populated areas and nature sites. IP and sustainability goals can explain why TSN is subject to government intervention, so we explore this case in more depth by considering the causal mechanisms at work that lead to speeding up the process (Seawright & Gerring, 2008).

## **4.2 Process tracing**

PT delves into 'how' and 'why' questions, and under what conditions certain changes occur. This often remains unclear in input-based or output-based analyses. The aim is to develop mid-range theories, which are qualified propositions, regarding processes of change within a single case and potentially extending beyond. It is an effective method for unraveling causal influences within complex contexts (Beach & Pedersen, 2013). Hereby enabling inferential leverage, which is often lacking in quantitative analysis (Collier, 2011). Several distinct causal paths can lead to a critical juncture, with each path representing a specific combination of factors (Mahoney & Goertz, 2006). PT aims to elucidate these causal mechanisms through a within-case approach, emphasising asymmetry and determinism (Beach & Pedersen, 2013). Asymmetry focuses on positively explaining outcomes without addressing negative outcomes simultaneously, while determinism involves providing positive explanations within a single case. This methodology allows for the identification of causal mechanisms that can trace, meaning they hold broader relevance and can apply to other cases with similar scope conditions (Beach & Pedersen, 2013; Capano & Howlett, 2019).

Various process tracing approaches encompass both theory testing, involving the deductive specification and testing of a theory-derived causal mechanism, and theory building, which entails inductively identifying a causal mechanism based on empirical evidence and theory (Beach & Pedersen, 2013). This research leans towards theory-building, as it is particularly valuable when the outcome is known, but the contributing mechanism remains unclear. The choice of this approach is motivated by the aim to refine HI in relation to the issue of institutional change. Pinpointing configurations of causal factors within complex systems, contributes to the inductive construction of social science theories (Byrne & Gill, 2013). Notably, our approach is also abductive, seamlessly integrating theory and empirical evidence.

### **4.3 Causal mechanisms**

The PT methodology prompts us to perceive any policy impact (Y) as the result of a causal mechanism. This mechanism consists of essential parts, which are individual components involving entities (such as objects, actors, or institutions) engaging in activities, which collectively transmit causal forces (Beach & Pedersen, 2023). The process involves reconstructing the chronology of events leading, in as much detail as possible, to a specific outcome of interest within its institutional context (Toshkov, 2016). Holistic explanations in complex scenarios, as investigated in this paper, may necessitate composite approaches involving multiple mechanisms.

Two conditions must be met to make plausible claims about the validity of the causal mechanism:

- (a) whether the mechanism is present or absent in the case, and;
- (b) whether the mechanism and its constituent parts operated as anticipated.

However even with confirmation of both conditions, we cannot conclusively assert the sufficiency or necessity of the mechanism to explain Y (Beach & Pedersen, 2013). Therefore, structured evidence assessment is required.

This thesis tries to find causal mechanisms that connect the sequence of events, drawing insights from various pieces of observations derived from the collected data. Rather than seeking average causal effects for generalisation, the aim is to illustrate how these various pieces of evidence contribute to understanding the potential causal relationships between the conceptual framework and the observed phenomena within this specific case. Theory testing of causal mechanisms requires seeking evidence that would (be minimally needed to) confirm the hypothesis (providing certainty) and evidence that would refute it. Subsequently, tests for uniqueness are identified with four tests: straw-in-the-wind, hoop, smoking-gun and doubly decisive tests (Barnet & Munslow, 2014). The hoop test and smoking gun test are emphasised by Mahoney (2012). In a hoop test, the validity of a hypothesis depends on the presence of a specific piece of evidence. Yet, finding this evidence does not conclusively confirm the hypothesis, meaning it could be false. On the other hand, the smoking gun test suggests that if specific evidence exists, the hypothesis is likely valid. Hence, the presence of this evidence makes it improbable for the hypothesis to be false, while its absence does not necessarily invalidate the hypothesis.

### **4.4 Data collection**

The provided evidence starts in 2008, a timeframe selected due to the pivotal role of a Zembra documentary. Widely recognised as a whistleblower, the documentary exposed Tata Steel's unlawfully

high emissions, triggering heightened societal awareness of health and environmental concerns. The Joint letter of Intent, as part of the *maatwerkafspraken*, was signed in 2022. This marks the first shift in change in binding policy documentation that will have long-term implications. However the binding agreement must still be agreed upon. In the meantime, other institutional developments can still be observed as late as October 2023, with this date marking the last available date to be considered in the analysis. Therefore the analysis will consider pressure and developments between the period of 2008-2023.

A range of evidence types are employed to test the hypothesis above by triangulating several primary and secondary data sources (see table 1). Primary documentary sources, include annual or multi-year work plans, industrial policy communications and other publicly available official documents and studies (e.g., by National Institute for Public Health (RIVM), Municipal Health Services and documents by national ministries), but also interviews.

Table 1. Primary and secondary data sources

|                               | Data type                                    | Source  | Data availability       |
|-------------------------------|--|---|-------------------------|
| <b>Primary data sources</b>   | RIVM health reports                          | RIVM  | Publicly available      |
|                               | Industrial policy communications and motions | Government  | Publicly available      |
|                               | Second chamber meeting notes                 | Government  | Publicly available      |
|                               | Interviews                                   | 1. Sacha Voet (Frisse Wind)<br>2. Pedro Nooijen (Extinction Rebellion)<br>3. Antoinette Verbrugge (Citizen lobbyist, Gezondheid op 1)<br>4. Expert on green industrial policy | Independently conducted |
|                               | Petitions                                    | Frissewind  | Publicly available      |
| <b>Secondary data sources</b> | News reports                                 | NOS, FD, BNNVara  | Publicly available      |
|                               | Podcasts and documentaries                   | Zembla<br>Tata's Ijzeren Greep<br>NOS explainer videos  | Publicly available      |

#### **4.4.1 Interviews**

Five interviews were conducted to gain diverse viewpoints on developments surrounding TSN (refer to table 1). These interviews deliberately focused on groups actively pressuring policy-makers and TSN to instigate change, aligning with the thesis' aim of understanding transformative pressures. Interviewees include Sacha Voet from Frisse Wind, who is mobilising local residents in support of the mass claim; Pedro Nooijen representing Extinction Rebellion; Antoinette Verbrugge, founder of Gezondheid op 1 (Health First), advocating for residents at various levels; and an expert on green industrial politics, who preferred to remain anonymous. The inclusion of the first three interviews emphasises the agency of individuals and groups actively involved in influencing and catalysing change. The interview with the expert was conducted for background research. These primary sources are combined with secondary sources from news outlets, podcasts and documentaries. Additional details can be located in the appendix.

#### **4.4.2 Indicators**

Three indicators have been defined to measure the drivers of change (see table 2). Firstly, expert knowledge can help to formulate problems and to set the agenda for future policy actions and is needed to generate awareness problem (Weiss, 1977). In this case, expert knowledge can be measured by the amount of studies and reports related to health and environmental risks published by the RIVM.

Secondly, salience is often measured through newspaper citations. Many aggregate research studies examining the connection between public opinion and public policy use the New York Times citation index as a metric for issue salience (e.g. Epstein & Segal; Lax & Phillips, 2012). Similarly, Culpepper (2010) uses press coverage of corporate governance issues as a proxy for their salience in public opinion. Defining salience as media attention to an issue offers notable advantages: it offers a reproducible, valid, and transferable method for assessing whether the actors under investigation perceive an issue as salient or not. In this thesis, issue salience is measured by the number of news paper articles published by the NOS. The NOS is selected because it is the country's public broadcasting company, it provides independent news, and is the largest news organisation of the Netherlands (NOS, n.d.). A notable limitation is that the archive of NOS.nl before 2010 is currently inaccessible online. Parts of the archive have gone missing, rendering all news articles published on NOS.nl before 2010 unavailable (NRC, 2018), thus articles between 2010 to October 2023 will be considered. Only articles containing "Tata Steel" in the title or first paragraph are considered. This specific criterion is implemented to ensure that

the selected articles are related to the business or institutional developments of TSN. Articles covering unrelated topics, such as the TSN chess tournament, are excluded from consideration.

Lastly, Davies (1970) argues that change lies in mobilisation and in the presence of mechanisms of change, society is marked by fluctuating social standings, allegiances, and political outlooks. Hence mobilisation will be measured by collective action activities amongst individuals and groups, e.g. protests, petitions, local activities.

*Table 2. Drivers of change for causal mechanism 1*

| <b>Drivers of change (= actors engaging in activities)</b> | <b>Indicators</b>                              | <b>Unit of measurement</b>                                  |
|--|--|---|
| Expert knowledge   | Scientific reports and studies being published | Number of scientific reports and studies published          |
| Issue salience   | News media engaging with the issue             | Number of news paper articles published                     |
| Mobilisation   | Actors engaging in collective action           | Collective action activities amongst individuals and groups |

#### **4.5 Analytical procedure**

Based on the theoretical and empirical considerations, a research design introduced by Patterson et al. (2019) will be applied, which entails the following analytical requirements:

- a. an actor-based historical institutionalist perspective;
- b. a research timeframe extending beyond a decade to effectively track institutional changes and their cumulative and individual impacts over time, and;
- c. a methodology centred on identifying causal factors and mechanisms to formulate a process-oriented rationale for observed institutional changes.

Combining the institutional model of science and the causal mechanisms for policy framing and agenda-setting model, we seek to explain the causal mechanisms that place pressure on policy-makers, ultimately resulting in institutional change. These models are adapted from Beach and Pedersen (2013), and Van Dijk and Alinead (2020) to make room for an actor-centred historical institutionalist approach, thus providing more room for various involved actors' agency. Regarding the pressure on TSN, we posit that the interaction is primarily bottom-up (communicative to coordinative), as environmentalists typically engage in discursive interactions characterised by this directionality (Schmidt, 2023). An exception to this directional flow is expert knowledge, originating in the coordinative sphere and subsequently

adopted by actors in the communicative sphere for utilisation. Consequently, until knowledge is picked up, it is not dominant in the coordinative sphere. A visualisation of the proposed causal mechanisms and interactions can be found in figure 2 below.

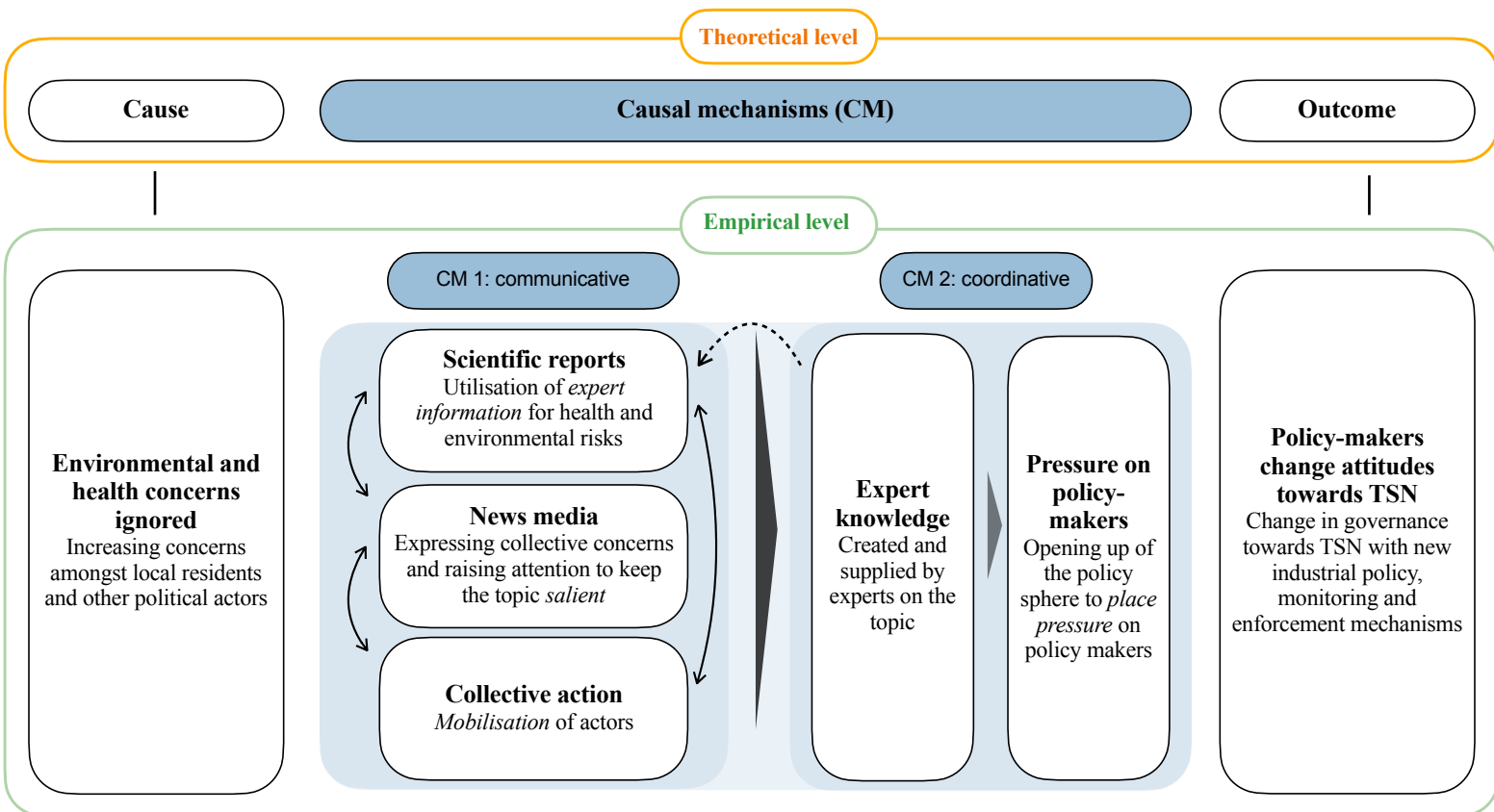


Figure 2. Proposed causal mechanisms in the TSN case study

As previously explained, a theory building PT approach within a single-case research design is employed. Firstly, the contextual setting of industrial policy developments in the Netherlands were studied in order to set the scene. From this vantage point, we gain a deeper understanding of the government's position regarding TSN. Secondly, the different steps of the framework are taken apart and studied at their individual level. This consists of the cause (Tata steel's exemption position, but also their unlawfully high toxic emission levels), the first causal mechanism (made up of three drivers: expert knowledge, news media and collective action) the second mechanism (pressure on policy-makers) and is concluded with the outcome (institutional developments crystallised as increased enforcement and monitoring). The research is concluded by seeking to explain the institutional developments from an exogenous perspective based on qualified judgments from the available evidence. Finally the combined pattern and effect will be examined, postulating the causal mechanisms for how different drivers



contributed to policy change, and empirically test for its validity. The collected evidence was assessed using causal mechanism testing.

## 5. Results

### 5.1 Cause: Tata Steel's unique position and high emission levels

To begin, we establish the presence of independent variable *X*: TSN high emission levels without facing consequences. This is evidenced by historical incidents of continued high emissions (see figure 3), with news evidence citing these developments while government intervention remained notably absent.

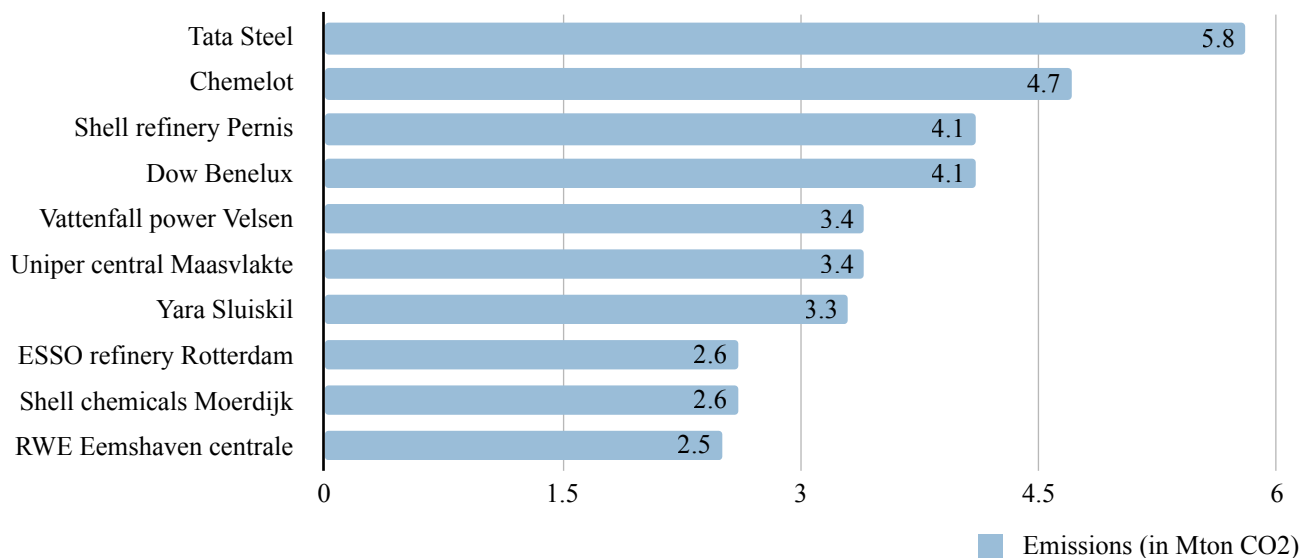


Figure 3. Top-10 CO<sub>2</sub> emitters in the Netherlands (NEa, 2023)

The Dutch basic metal industry, led by Tata Steel in IJmuiden, entered into an environmental agreement with the government in 1992 to substantially reduce pollutant emissions by 2010. However, recent findings by NU.nl indicate that many of these goals have not been met, with TSN alone exceeding sector-wide emission limits for particulate matter, sulfur dioxide, and nitrogen. The environmental agreement is untraceable online but was discovered in the National Archives by NU.nl in 2023. It showed that TSN's emissions significantly exceed the set targets, with particulate matter surpassing 600 tons in 2021 (compared to the 2010 goal of 363 tons), sulfur emissions exceeding 2,700 tons annually (beyond the 2010 target of 1,600 tons), and nitrogen oxide emissions reaching over 5,000 tons each year (despite a sector-wide target of 880 tons for 2010), as depicted in figure 4 (NU.nl, 2023a). The untraceable agreement is indicative of TSN's attempt to control the policy image by downplaying evidence, thereby generating negative feedback to resist change (Baumgartner & Jones, 1993).

Incidents involving the release of harmful substances have been frequent at Kooksfabriek 2, which was constructed in 1972 to make coke from coal. In 1988, after much negotiation, the province entered into

an agreement with Hoogovens. The company committed to investing around 200 million guilders (now equal to €100 million) in environmental measures through the reduction of sulfur and dust emissions at two factories on the premises. Yet in the late nineties it once again became evident that door leakages at the factory exceeded the permitted levels, as per Wim Bakker who was the permit-provider at the time. These upgraded doors were eventually installed around 2007, more than twenty years after the initial discovery that the original doors were inadequate (NU.nl, 2023b). So while concerns trace back to the 1980s, they failed to prompt a significant shift in the system, thus allowing TSN to continuously emit pollutants without substantial repercussions. Government interventions were severely limited to the bare minimum, without any monitoring or enforcement mechanisms in place. This accentuates the challenges associated with deviating from the established high emissions trajectory, reinforcing increasing returns processes and maintaining the existing lock-in (Skocpol & Pierson, 2002). The green polder model explains that TSN can continue to exploit their relationship with the government to support their preferences (Glasbergen, 2002). At this point, there is limited space for other voices in the policy sphere.

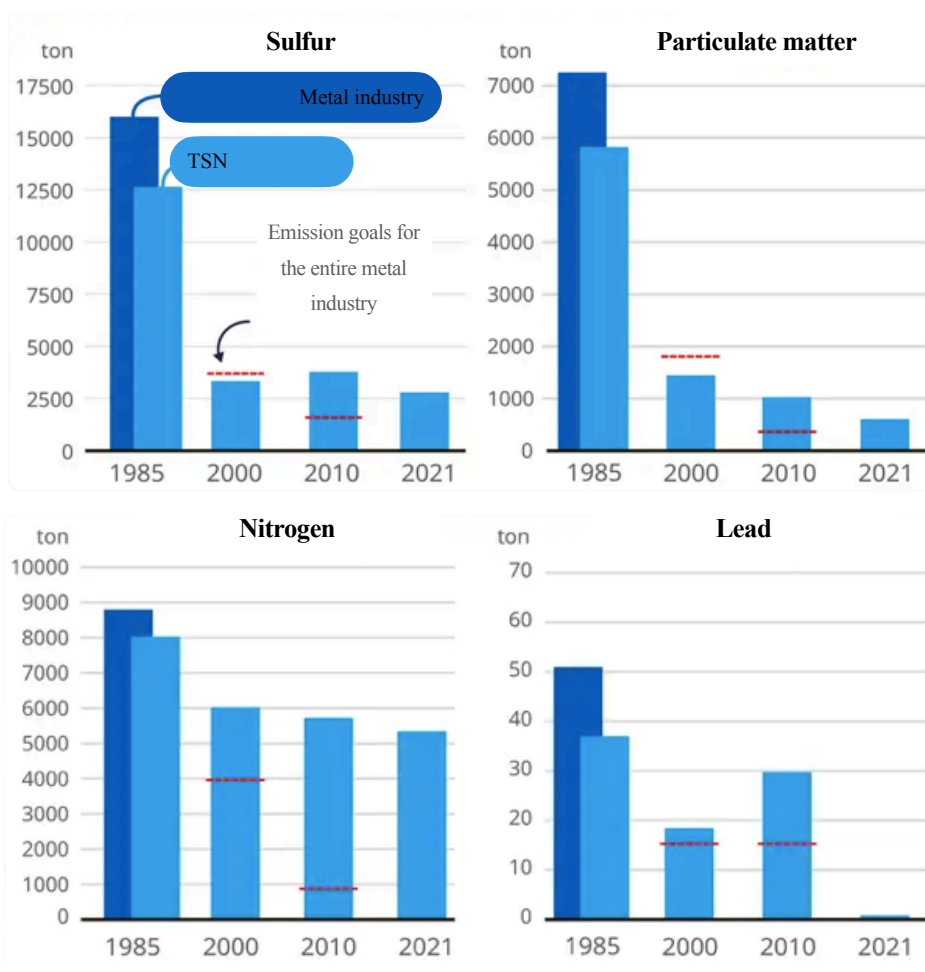


Figure 4. Emissions sourced from the metal industry and TSN (NU.nl, 2023a)

Initially regarded as an economic powerhouse supporting regional employment, TSN has deep roots in the community and creating a familial connection with jobs often passed down through generations (NOS, 2021). Yet, rising health issues among local resident have sparked growing concerns about emissions and pollution.

## 5.2 Causal mechanism 1: communicative policy making sphere

The first causal mechanism is made up of interactions between increased expert knowledge, mobilisation and salience in the communicative policy sphere. Drivers consist of: knowledge creation, highlighting the health and environmental risks related to TSN activities; salience, which represents raising attention to the public and; lastly mobilisation represents citizens engaging in collective action (see table 3). Various pressures should be observed in the case of health and environmental risks related to TSN, as will be showcased in the upcoming section. Accordingly, three hoop tests are proposed:

- Presence of expert knowledge being utilised
- Observing communication efforts to keep issues surrounding TSN salient
- Evidence of different groups collectively engaging in activities against TSN to collective

The absence of evidence for any of these would critically undermine the validity of the first causal mechanism.

*Table 3. Pressures observed in the communicative policy making sphere*

| <b>Drivers</b>                  | <b>Period</b> | <b>Actors involved</b>       | <b>Indicator</b>           | <b>Additional information</b>   |
|---------------------------------|---------------|------------------------------|----------------------------|---|
| Zembla documentary              | 2008 may      | Media                        | Expert knowledge, salience | Documentary which evidenced that the province issues excessively lenient permits for the emission of carcinogenic substances                                      |
| Health reports                  | 2009-2023     | RIVM, GGD and partners       | Expert knowledge           | 31 reports regarding health and air quality in the IJmond region are utilised   |
| Residents file for legal action | 2021 may      | Citizens and activist groups | Mobilisation               | A criminal case is filed against Tata Steel on behalf of 1100 individuals and 8 foundations. The company is accused of knowingly emitting carcinogenic substances |
| Citizens place cameras          | 2023 may      | Citizens and activist groups | Salience                   | Citizens place cameras to collect independent information on the TSN's emissions  |

| Drivers                                   | Period         | Actors involved              | Indicator        | Additional information  |
|---|----------------|------------------------------|------------------|---|
| Protests on TSN terrain                   | 2023 June      | Activist groups              | Mobilisation     | Hundreds of climate activists on Tata Steel premises in Velsen-Noord. TSN and the government was explicitly called out to take action               |
| Mass claim against Tata Steel             | 2023 august    | Citizens and activist groups | Mobilisation     | Residents seek compensation for health risks exposures  |
| Incriminating report from 1975 resurfaces | 2023 September | Media                        | Expert knowledge | An old study from 1975 emerges, indicating that high concentrations of pollutants were present in the air around the Wijk aan Zee area at that time |
| Increased reporting                       | 2018-2023      | Media                        | Salience         | Increased attention towards TSN in the news   |

### Zembla documentary (2008)

The first shifts in the system could be observed following the Zembla broadcast that exposed TSN's high emissions, leading to more awareness and commotion. In 2008, Zembla, an independent investigative journalism program by BNNVara, aired a documentary titled 'Het gif van Corus' ('The poison of Corus'), now TSN. The documentary highlighted the province's issuance of excessively lenient permits for the emission of carcinogenic substances. It also showed that the Regional Public Health Service (GGD) observed a higher incidence of cancer in the area compared to other parts of the country, although a direct correlation between cancer and factory emissions remained unproven due to a lack of formal investigation, prompting expert warnings. BNNVara utilised expert information to question the effectiveness of TSN and the government in protecting citizens' health, thereby raising awareness to the health issue to increase salience across the nation (Ferrara, 2022).

### Health reports and first recognition of health risks (2009-2019)

First off, the RIVM commenced structural health monitoring in the region in 2009 thereby producing expert knowledge in the coordinative sphere, which could be used the communicative sphere. In collaboration with the GGD, the RIVM conducted periodic research on emissions, environmental quality and residents' health. Between the period 2009 to 2023, 31 reports were published (see figure 5 below).

Between 1995 and 2008, seven studies related to the same topic were published, indicating a significant increase in reporting after 2008.

More specifically, the reports revealed that Tata Steel's contribution to particulate matter levels in the air could potentially lead to a slight increase in health complaints. The study also examined the prevalence of various forms of cancer in the region, indicating a relatively higher occurrence of lung cancer in IJmond. However, attributing this solely to Tata Steel's emissions proved inconclusive. This necessitated further monitoring and additional research into the health and environmental implications. The ongoing trajectory monitored the extent to which Tata Steel's measures to reduce particulate matter emissions influenced residents' health. In this period, TSN as the main actor in the policy monopoly was able to control the narrative by concentrating on the positive effects of the company to the region. TSN did not face many obstacles to this, considering that the company is tied into the economic fabric of the region. These changes were perceived as a threat to the status quo (Peters, 2019b), thus this emerging evidence was disregarded or downplayed within the current subsystem to negative feedback and maintain the status quo (Baumgartner & Jones, 1993).

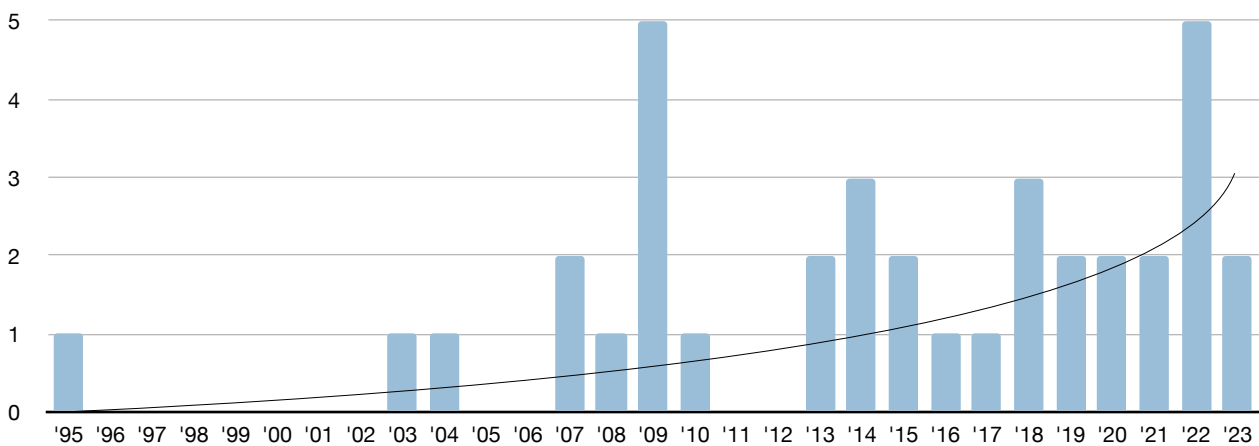


Figure 5. Reports about health in the IJmond region published by RIVM (RIVM, n.d.)

Between 2010 and 2019, the RIVM consistently released fifteen reports, including studies on 'graphite rains' in 2018 and 2019, where black dust settled on homes, cars, and playgrounds (NOS, 2023d). TSN's research claimed the rains were mainly carbon, sulfur, and metals. Initially, the GGD downplayed immediate danger but advised precautionary measures to wash their hands more frequently, peel vegetables and keep windows closed as much as possible. This caused confusion and anger among residents, causing people to critically examine the extent to which their health was being protected by the

government (Schmidt, 2010b). Amidst growing dissent in IJmuiden, the RIVM later deemed these events detrimental to health. However, apart from a gradual growing dissent among the inhabitants of IJmuiden, there was not much substantial action being taken. These interactions adhere to the institutional model of science communication, where TSN, the GGD, the RIVM and non-experts are competing to influence the community's understanding and response to the environmental concerns raised (Van Dijck & Alinead, 2020). The singular observed pressure of knowledge creation indicates dynamic equilibrium, where the topic is becoming more salient but is not sufficient to trigger significant change on its own (Baumgartner & Jones, 1993). The presence of expert knowledge provides a tool for interest groups to support their preferences and to frame problems, thereby being able to influence policymakers (Campbell, 2002). However at this stage regime opponents have not effectively mobilised, therefore the results of their efforts were limited (Ferrara, 2022).

#### Residents' growing distrust and dissent (2020-2022)

In 2020, a report from GGD Kennemerland sparked renewed unrest as the health service observed that residents in the Haarlem and IJmond regions were more likely to develop cancer than other Dutch citizens, as well as facing a 25 percent higher chance of developing lung cancer in Beverwijk. The GGD remained cautious about pinpointing the cause, suggesting it could be due to past smoking habits among Beverwijk residents, but mentioned that it was plausible that air pollution with particulate matter also played a role (Oldenbeuving, 2020). Later on residents' distrust grows as they discover that TSN's name was omitted as a possible cause of the elevated cancer rates in the 2020 GGD report, a decision later controversially deemed justified by an external investigation. However, residents perceived this as unjust and believed that the authorities' approach prevents holding Tata Steel accountable for health damages. Here we see that residents are using expert information to frame the problem in line with their preference for health protection (Campbell, 2002). Among residents, there is a gradual accumulation of information and ideas, once again questioning the appropriateness of established power structures, acting as a catalyst for change (Ferrara, 2022).

Public dissent culminated in May 2021 when residents took matters into their own hands. Hundreds of residents filed complaints, prompting a criminal investigation at the Public Prosecutor's Office (OM). Renowned Dutch criminal lawyer Bénédicte Ficq filed a complaint against Tata Steel on behalf of 1,100 individuals and eight foundations, accusing the company of knowingly emitting highly dangerous and carcinogenic substances (Noordhollands Dagblad, 2021). The sectional interests of surrounding residents are gradually becoming more organised through collective mobilisation, allowing for more effective



pressure to delegitimise the (lack of) rules applied to TSN (Baumgartner & Jones, 1993). In February 2022, the OM launched a criminal investigation into TSN, aiming to determine whether the intentional release of hazardous substances into the environment posed a threat to public health, with scrutiny also on the roles of company executives (Openbaar Ministerie, 2022a). The ongoing investigative process prohibits the Public Prosecutor's Office from disclosing further details. Upon completion, it will be announced whether the criminal investigation will result in the prosecution of the mentioned legal entities or individuals, potentially displacing the existing institutional rules to safeguard the health of residents (Ferrara, 2022; Baumgartner & Jones, 1993). The duration of the investigation remains undisclosed.

In 2021 the RIVM conducted a comprehensive study to repeatedly measure the deposition of PAHs and metals, aiming to provide insights into potential trends of the output. The results revealed that residents in the region experienced headaches, nausea, and higher incidences of heart issues, diabetes, and lung cancer more frequently compared to other parts of the Netherlands. Although the connection to Tata's emissions appeared evident, the RIVM emphasised the necessity for additional research to scientifically establish this link (RIVM, 2021). Subsequently, in 2022, the RIVM conducted a second investigation in the spring and a third in the fall, as commissioned by the province of Noord-Holland and the Ministry of Infrastructure and Water Management. Expert knowledge on health implications was consistently fed into the system, which all parties strategically employed to substantiate their organisational preferences (Majone, 1989).

TSN also utilised this information by releasing updates to its Roadmap during this period. Initially the company had planned to reduce its lead emissions by seventy percent in 2025 compared to 2019, but in 2021 the steel manufacturer promised to achieve this goal as early as 2023 (Tata Steel, 2022a). Multiple theories can explain why TSN released this: due to gradual adaptation to its environment to align with prevailing perceptions (March & Olsen, 1989; Rothstein, 2005) or to feed its dominant narrative (Baumgartner & Jones, 1993). In 2022, TSN claimed that the emission of carcinogenic substances had been reduced by half since 2019, but the RIVM was not able to observe improvements in the dust settling raising. In fact the RIVM identified significantly higher concentrations of metals and carcinogenic substances than expected based on TSN's own emission figures, showing that the company is still trying to control the narrative. From this perspective it is no surprise that local inhabitants have voiced discontent; "*We haven't trusted Tata Steel for a very long time*", said an activist to the NOS (2023a, p.1).

### Manifestation of growing dissent, placing of cameras and protests (2023)

In May 2023, citizens once again assumed an active role, taking three unprecedented steps: own monitoring, a mass claim and protests. Firstly, Greenpeace and Frisse Wind (a foundation established to improve the living conditions in the Kennemerland region) installed three cameras around Tata Steel in IJmuiden, enabling online monitoring of the company's emissions. The organisations encourage people to report potential incidents, such as a fire or the presence of black, yellow, orange, or brown smoke, through *spotdegifwolk.nl*. Greenpeace assesses each report and forwards them to the Environmental Service North Sea Canal Area (OD NZKG) if they observe a toxic cloud. Out of distrust and as a method of collecting their own (conflicting) information, citizens have taken it upon themselves to collectively monitor TSN themselves (Daviter, 2015). Sacha Voet expressed that Frisse Wind felt that had to undertake the government agency's responsibilities by installing cameras to monitor TSN (interview 1). This placed pressure on the government to improve their own monitoring, because following this action, the OD NZKG received 300 percent more reports from TSN than before. The direction of influence flowed from the the public towards the government, mirroring Schmidt's (2023) theory on communicative to coordinative influence flow on environmentalist issues.

Secondly, a mass claim against TSN was announced in august 2023 with residents seeking compensation. The board of Frisse Wind holds TSN accountable for the material, immaterial, and health damage suffered by residents due to the emission of hazardous substances. They state that:

*"Tata Steel profits from free emissions, while residents incur various costs, suffering, and damages. We deem this unjust and believe that Tata Steel, as the polluter, should bear these costs. Therefore, we are taking a significant step forward by holding Tata Steel accountable for the damages suffered by the affected parties"* (Frisse Wind, 2023).

Over the past few months, more than 1400 individuals identified themselves as victims. This group primarily consists of direct residents in the area along with individuals who relocated from the region for health reasons. This shows that mobilisation is becoming effective as collective concerns are being expressed and there is more convergence towards the common goal of improved health conditions and health protection (Ferrara, 2022; Zara et al., 2020).

However when asked to come forward, local residents are scared to actively speak out against TSN, as exemplified by the following quote from Voet:

*“Do you want to speak out in the media or let your name be known? They say “that’s not possible because, for example, I’m the head of the scouting association. And the scouting ground is sponsored by Tata... Tata is really ingrained in their DNA, and that says a lot about the power of Tata in that area” (interview 1).*

Tata not only exerts control over their surroundings but also employ tactics such as non-disclosure agreements or financial incentives to maintain a grip on dissenting voices (interview 1, interview 3). The interplay between power asymmetries and lock-in effects, therefore effect the ability of residents to identify and express their discontent with TSN (Thelen, 2002). This creates a formidable barrier to change within the community. The entrenched influence of TSN, coupled with the economic and social ties it has established in the area, contributes to a situation where dissenting voices find themselves caught in a web of dependencies and obligations. As a result, individuals who might consider challenging the status quo are deterred by the fear of jeopardising existing relationships, whether they be personal, professional, or community-based. Skocpol and Pierson (2002) argue that such self-reinforcing loops can be perpetuated by a combination of institutional structures, historical legacies, and strategic choices made by powerful actors. In this case, the continued dominance of TSN in the community, supported by economic dependencies and alliances, fortifies the existing power imbalances and ensures that any attempt to break free from the established pattern encounters significant resistance (Avelino and Rotmans, 2009).

TSN rejected any liability for the damages incurred by the residents surrounding the steel factory in IJmuiden, thereby resisting forces of change. The company communicated this stance to the Frisse Wind foundation, which was preparing a mass claim involving thousands of affected individuals (AD, 2023a). Consequently, Frisse Wind are taking the matter to court (NJB, 2023). This is an interesting stance in light of a new report that the RIVM published a month later, which established a direct link between TSN's emissions and health issues among local residents on a large scale. The emissions, particularly fine particulate matter and nitrogen oxides, along with nuisances like dust, odour, and noise, increase the likelihood of health effects. The report revealed that people living in the IJmond region have a higher risk of falling ill due to Tata Steel's emissions, but also that residents around Tata Steel live an average of 2.5 months shorter (RIVM, 2023a). Furthermore 4 percent of all cases of lung cancer in Wijk aan Zee are attributed to the factory's emissions. The study marked the first time a comprehensive assessment was conducted by considering emissions from all business units that contribute to health issues (NOS, 2023b). As the institutional model of science denotes, the expert knowledge is being translated by non-

expert actors. This brings rise to a struggle for power where TSN is competing with residents about the liability of these damages (Van Dijck & Alinead, 2020).

Thirdly, June 2023 marks a significant shift as pressure is directly exerted on policy institutions through protests. 400 Greenpeace activists, Extinction Rebellion and critical local residents gathered in protest camps around Tata's factories to advocate for the closure of the harmful components of TSN. A consistent sentiment emerged in interview, expressing frustration with the lack of government or TSN action to reduce emissions. This sentiment is reflected in Nooijen's statement:

*“TSN somehow gets away with things, or at least can buy time”* (interview 2).

Prior to the protest a Greenpeace spokesperson announced the demands of the on-site protest, explicitly mentioning the government:

*“Close down the most harmful components. We leave through the main entrance with heads held high. If the government or Tata Steel do not intervene, we will be back”* (AD, 2023b).

Kende et al. (2016) underscore the role of protesters as catalysts for change. The protests had an influence on TSN who claimed to share the same goal as the activist groups, having announced plans in 2022 to accelerate sustainability initiatives for the IJmuiden factory (Tata Steel, 2022b). Does this mean a consensus has been reached and that newfound stability has been established?

### Increased reporting

The volume of NOS articles has increased with the unfolding case. Between 2011 and 2015, the article count remained relatively stable. However, from 2016 onward, a significant surge in publications occurred (see figure 6). This shows that more attention is being paid to health and environmental concerns, meaning salience is increasing (Moniz & Wlezien, 2020). The peak was in 2021, with the residential complaints, criminal investigation and permit concerns. Salience declined in 2022 but nevertheless, a noteworthy development was TSN's acknowledgement of being *“late to start with sustainability”*, specifically regarding hydrogen (NOS, 2022, p. 1). Despite this, the increased number of published articles indicates that the topic of TSN is more salient in the media now than before.

In line with Culpepper's (2010) work, the observed increased salience in NOS contributed to trigger policy responses and reduce TSN's influence. As research by Junk (2019) points out, when a policy issue garners significant public attention, officials tend to be more cautious, adapting their decision-making process to avoid reputational issues and ensure successful approval and implementation of legislation. Therefore, the heightened salience in media coverage surrounding TSN contributed to triggering a policy

response, as public officials may be more attuned to addressing the concerns and repercussions associated with the unfolding situation.

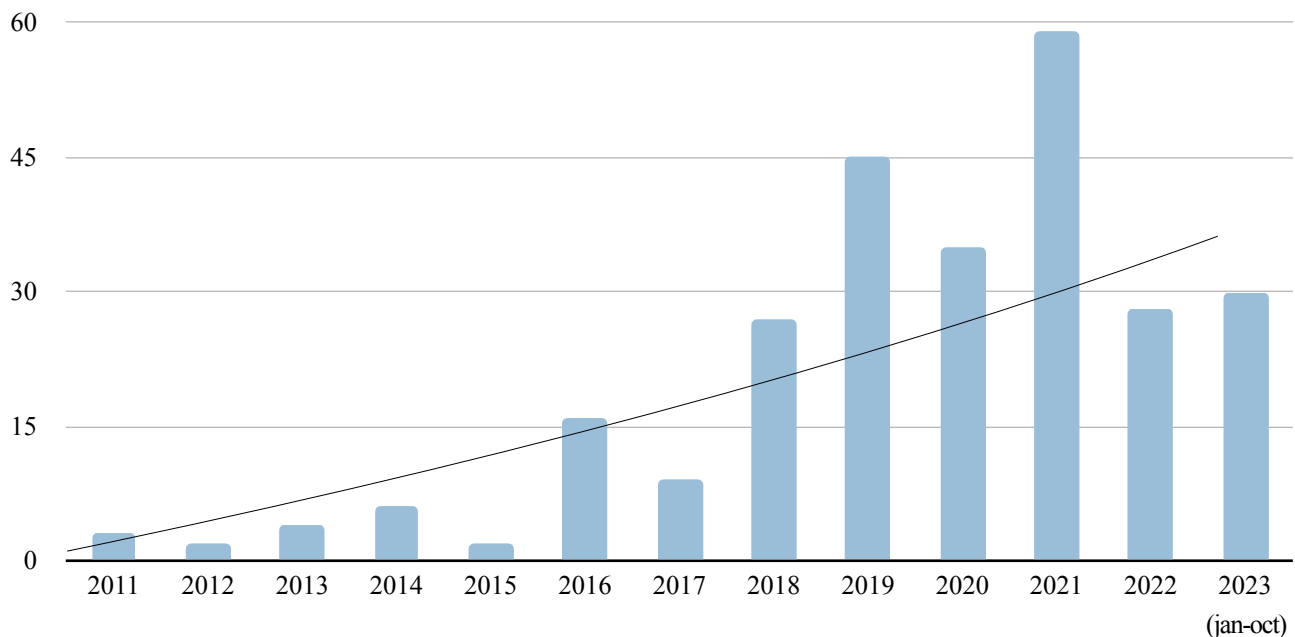


Figure 6. Number of reports published about TSN by the NOS

#### Leaked information surfaces (2023)

The last driver identified is an old report from 1975 that was uncovered by EenVandaag and published in September 2023. Commissioned by the province of North-Holland and the municipality of Amsterdam, the report revealed prior knowledge of toxic substances in the air, indicating significantly higher pollutant levels near the Hoogoven terrain compared to other monitoring points (EenVandaag, 2023). Additionally a recent investigative study by NU.nl uncovered that a confidential summary of the agreement, prepared by Hoogovens, indicated that not all structural permit violations were addressed. For example, the attempt to permit fewer door leakages in the license was withdrawn, allowing the doors to continue emitting carcinogenic substances for many years with the province's approval (NU.nl, 2023a). Toxicologist Jacob de Boer already expressed concern about the carcinogenic nature of polycyclic aromatic hydrocarbons (PAHs) and that this topic should have received more attention at the time (NU.nl, 2023b). Next to governments being exposed, this incident also exposed the lack of accountability and rule-bending that TSN profited from. Altogether, this indicates the presence of lock-in effects, wherein TSN's ongoing exemption position proved challenging to alter (Skocpol & Pierson, 2002).

Health experts, expressed their criticism to the NOS, holding TSN, the permit issuer, the province, and even organisations like the GGD accountable for negligence. In response, TSN dismissed the

significance of the report, deeming it “*interesting for historians*”, and emphasised a focus on the present (NOS, 2023e, p. 1). The company's stance not only raises questions about its commitment to change and accountability but also prompts an examination of whether the status quo can indeed be altered. This topic will be delved into further in the upcoming sections.

Table 4 provides a summary of the evidence, indicating that all three hoop tests were passed. This provides confidence that different drivers are present that led to placing pressure on policy makers.

*Table 4. Hoop tests for causal mechanism 1*

| <b>Drivers</b>   | <b>Hoop test</b> |
|--|------------------|
| Presence of expert knowledge utilised  | Pass             |
| Observing communication efforts to keep issues surrounding TSN salient                     | Pass             |
| Evidence of different groups collectively engaging in activities against TSN to collective | Pass             |

### 5.3 Causal mechanism 2: coordinative policy-making sphere

Building on the first causal mechanism which confirmed the presence of drivers related to the TSN issues, the second mechanism expects to see a heightened degree of pressure in the coordinative policy-making sphere. The presence of multiple pieces of evidence pointing in this direction would strengthen the mechanism. On the other hand, absence of any such evidence would undermine confidence in this mechanism, as would explicit political statements that TSN emission levels are not so serious or urgent. To test causality, the following hoop test conditions have been formulated:

- Expert knowledge is created
- Pressure is directly placed on policy makers
- Pressure comes from more than one actor

Three key pressures have been identified: expert knowledge creation, recognition of insufficient protection by the safety investigation board, increased expert knowledge and lastly, a prominent political research institution concluding that IP has given incorrect incentives. A summary of these drivers can be found in table 5 below.

*Table 5. Summary of observations where direct pressure is exerted on policymakers*

| Pressures   | Period     | Actors involved                                 | Additional information   |
|---|------------|---|--|
| Publishing health reports   | 2009-2023  | RIVM, GGD and partners                          | 31 reports regarding health and air quality in the IJmond region are published   |
| Recognition of insufficient protection of resident's health                               | 2023 April | Onderzoeksraad (The Safety Investigation Board) | Critical report urges improved government measures to safeguard residents from harmful industrial emissions  |
| Prominent research institute calling the government out for ineffective industrial policy | 2023 sept  | WRR - research institute                        | WRR report calls for a shift in dutch industrial policy: ending favorable treatment of established players and fostering innovation to address societal challenges |

### Expert knowledge creation

As previously explained in the first causal mechanism, 31 reports have been published between 2009-2023. This knowledge was created in the coordinative sphere, and utilised in the communicative sphere to place pressure on the government.

### Publication Dutch Safety Board

The release of the Dutch Safety Board's (DSB) report represents a pivotal moment, marking the formal involvement of policy institutions for the first time since 2008, when the Minister of VROM requested RIVM research into the factory. Historically, the conflict was centred on citizens and the manufacturer, with policy-makers remaining notably inactive. The DSB's conclusion emphasised the need for better protection of the health of individuals residing near industrial facilities. The report called out companies, local government authorities, and environmental services for inadequate efforts in reducing industrial emissions and ensuring compliance with existing standards. It states that governments often responded reactively due to a lack of knowledge, capacity and sense of urgency thus often operating on short-term horizons. This report directly pointed to the government's insufficient action, highlighting a shift where policymakers can no longer turn a blind eye to the issues at hand. This highlights a failure in the implementation of IP which should be oriented towards long-term objectives rather than short-term goals (Rodrik, 2014).

### New exposure ineffective industrial policy

The latest identified pressure emerged when the Wetenschappelijke Raad voor het Regeringsbeleid (WRR) published a report in September 2023 addressing Dutch IP, including TSN. The WRR informs and advises the government and parliament on major societal issues. The findings of the report hold a critical perspective on the government's approach, asserting that it frequently provides misguided incentives to businesses, particularly concerning significant societal issues such as climate, public health, and the job market. In fact, "*companies possess tremendous innovative capabilities...They can provide solutions to numerous societal issues, including healthier nutrition, recycling, and energy transition. However, this doesn't happen automatically*" (NOS, 2023c, p.1). The report advises against the continued favouritism towards existing major players, advocating for a cessation of such coddling and a more concerted effort to encourage innovation (WRR, 2023). Here it becomes evident that IP is failing, and that policy makers should stop their continued support towards TSN (Terzi et al., 2023). Experts are exerting direct pressure on policymakers, indicating a shift where pressure now emanates not only from the communicative sphere but also from within the coordinative sphere. Consequently, policymakers'



decisions and legitimacy are being scrutinised (DiMaggio & Powell, 1991) and pressured into overcoming institutional continuity (Mahoney & Thelen, 2010). This suggests a growing recognition of the need for change in the IP landscape, with mounting pressures coming from various sectors.

Another hoop test has been conducted to support the presence of pressure on policy-makers (table 6). Substantial evidence to underscore the validity of the second causal mechanism has been found, so an institutional change is expected.

*Table 6. Hoop test for the second causal mechanism*

| <b>Pressures</b>                             | <b>Hoop test</b> |
|--|------------------|
| Expert knowledge is created                  | Pass             |
| Pressure is directly placed on policy makers | Pass             |
| Pressure comes from more than one actor      | Pass             |

## 5.4 Outcome: Institutional developments

Finally, the expected outcome is the presence of change in the institutions, signified by governmental actions regarding TSN in the form of formal agreements (EoP, JoI), either being discussed or formulated, as well as monitoring and enforcement mechanisms. To be valid, this would need to manifest as formal agreements, change in governmental rhetoric, more monitoring or enforcement mechanisms.

The institutional developments that were observed can be found in table 7 below. This is a summary of significant events concerning Tata Steel and concerns about the health of residents in the vicinity.

*Table 7. Institutional developments related to TSN emissions in IJmuiden, the Netherlands*

| Institutional development  | Period        | Actors involved                            | Additional information  |
|--|---------------|--|---|
| The Minister of VROM requested the RIVM to examine whether Corus's (now TSN) emissions could impact the health of IJmond residents | 2008 June     | Minister of VROM, RIVM                     | This initiated the first series of studies into the steel manufacturer  |
| Motion Moorlag   | 2020 June     | Second chamber                             | The Dutch Parliament calls for government intervention to safeguard TSN innovation and sustainability and employment. The Minister of Economic Affairs is urged to liberate the company from Tata conglomerate  |
| Motion Moorlag and Van Dijk  | 2021 February | Second chamber                             | Urges the government to support sustainable steel production, reduce emissions, and preserve high-quality jobs in the Netherlands   |
| Expression of Principles   | 2022 July     | Government and TSN                         | Outlining the state and the company's aspirations for clean, green, and circular steel production in the IJmond. Currently, efforts are underway to finalise a JLoI   |
| Four investigations into TSN (criminal prosecution) where TSN is fined for non-compliance  | 2022 December | Public Prosecution Service (OM)            | Four investigations submitted by the OD NZKG and Rijkswaterstraat related to neglect and permit violations. The judge imposed two fines totalling 110,000 euros for non-compliance with permits and regulations |
| Pilot with camera's to monitor TSN pollution   | 2023 February | Environmental Agency (OD NZKG)             | The OD NZKG aims to broaden supervision over Tata Steel's coke ovens, allowing incidents involving raw coke to be detected at an early stage  |
| Enhanced monitoring for TSN's coke gas plants  | June 2023     | Environmental Service North Sea Canal Area | The two coke gas plants of TSN are placed under intensified supervision   |

| Institutional development   | Period         | Actors involved | Additional information   |
|---|----------------|-----------------|--|
| Parliament urges the government to revoke European exception rule for TSN | September 2023 | Second chamber  | Parliamentary majority wants the government to reverse the EU emission exception as soon as possible, so that TSN is also held to the applicable rules |

### Examination into Corus

The first sign of change took place in 2009, when the RIVM highlighted that the Zemblu documentary spurred investigations into Corus (now TSN) thus marking the inception of the first health report series, as evidenced by the following quote:

*"In May 2008... Zemblu brought attention to residents' concerns regarding the emissions from Corus (now Tata Steel). In response to parliamentary inquiries, the Minister of VROM (Minister of public housing, urban planning and environmental management) requested the RIVM on June 2008 to examine whether Corus's emissions could impact the health of IJmond residents"* (BNNVara, 2023, p.1).

Policymakers sought expert knowledge on TSN emissions, which could be used to enhance legitimacy and meet societal expectations, as put forward by DiMaggio and Powell (1991). This offers a doubly decisive test by explicitly mentioning the causal link between *X* and *Y*. The initial health report series, encapsulated in the publication 'Wonen in de IJmond, ongezond?' ('Living in IJmond, unhealthy?'), delivered conclusions and recommendations to the second chamber, confirming the IJmond region as significantly burdened in terms of air quality.

However, this critical juncture did not entail sufficient pressure to bring about significant changes. Instead, a state of stability marked by the persistent path of continued emissions prevailed, in line with Baumgartner and Jones' (1993) and Skopol and Pierson's (2002) research. Stability is exemplified by the nature permit issued in 2016, where the Environmental Agency of North-Holland had the opportunity to address TSN's nitrogen emissions, but rather the permit granted more nitrogen capacity than TSN has ever utilised in the past (Rijksoverheid, 2023a). Consequently, there was no incentive for TSN to invest in nitrogen capture technologies, resulting in the perpetuation of old IP (Skopol & Pierson, 2002).

In line with Mahoney and Thelen's framework (2010), politicians exhibited opportunistic behaviour, prioritising the protection of their reputation over the more challenging option of compelling TSN to alter their business operations. During a period of heightened salience, increased attention was focused on

politicians regarding this issue, and they opted to avoid risks associated with altering the status quo, as Siderius and Poldner (2021) point out. While this critical juncture had the potential to be momentous, change was not guaranteed (Bromley-Trujillo & Poe, 2020). In this scenario, a self-reinforcing loop has solidified, where the reoccurrence of continuous emissions and government permissions takes place. Consequently, governmental support is sustained although it is clear that the policy has failed to protect citizens, in line with research from Terzi et al. (2023). The decision made during this critical juncture explains the subsequent four years of stability and evidences the need for more pressure to overcome the prevailing stability (Beyer et al., 2022; Baumgartner & Jones, 1993).

### First signs of change

Yet it was not until June 2020 that a new development could be observed, implicating a long period of stability. The Dutch Parliament requested government intervention to protect the innovation, sustainability, and employment aspects of TSN with ‘Motion Moorlag’. The motion expressed concerns about the limited autonomy of Tata Steel in making decisions, urging the Minister of Economic Affairs to free the company from the Tata conglomerate. Most notably, the use of “*unconventional means*” was suggested to ensure the Dutch steel industry's continued innovation and sustainability (Moorlag, 2020). This stands as an alternative explanation, where the concerns for the Dutch economy stood as a key pressure, opposed to the the aforementioned pressures.

On 25 February 2021, shortly after Ficq declared her intention to file a criminal complaint against TSN for the intentional contamination of humans and animals, MPs Moorlag and Van Dijk (PvdA) jointly presented a motion addressing the future of TSN. Unlike the previous motion, this one focused on the adverse impacts of the steel industry on the living environment in IJmuiden. The motion also emphasised the significance of the thousands of direct and indirect jobs generated by TSN (Moorlag & Van Dijk, 2021). Additionally, the MPs stressed that TSN possessed the potential to transition to environmentally friendly steel production, leading to a substantial reduction in pollutant and CO<sub>2</sub> emissions to serve as a model for green steel production. Hence, in their motion the MPs call upon the government to “*do everything reasonable and possible to enable TSN to green steel production, to significantly reduce emissions of pollutants, in order to preserve this industry with its high-quality jobs for the Netherlands*” (Moorlag & Van Dijk, 2021). The link between the criminal complaint and the motions show how residents collectively mobilised and disseminated information to delegitimise the favourable conditions for TSN by displacing existing IP.

The causal link between pressures and governmental actions solidified in March 2021 when an Expression of Principles was formally endorsed by the Dutch Minister of Economic Affairs and Climate Policy, and TSN. This agreement signified collaboration between the involved parties in endeavours related to CO<sub>2</sub> reduction, environmental initiatives, and innovation projects (Rijksoverheid, 2021a). Minister Bas van 't Wout communicated the agreement to Parliament through a letter, in which he affirmed the government's commitment to supporting TSN in its transition towards sustainability, offering assistance if necessary and where possible (Van 't Wout, 2021). Acknowledging the significance of sustainable and low-carbon steel production in IJmuiden, he underscored the government's broader objective that this transition towards sustainability should occur within the Netherlands rather than abroad — a sentiment also echoed in the motion put forth by MP Moorlag (Van 't Wout, 2021). Minister Van 't Wout can be perceived as an opportunist, acknowledging the increasing prominence of sustainability strategies in the public sphere. He actively advocated for change from within the coordinative sphere, employing conversion strategies to advance sustainability efforts (Mahoney & Thelen, 2010). Yet ultimately, his initiatives align with the overarching goal of IP, which aims to establish favourable conditions that enhance industrial competitiveness (Bivens, 2023).

#### 4 investigations: TSN fined for non-compliance

The OD NZKG, responsible for overseeing compliance with environmental regulations, and the Rijkswaterstaat filed charges against TSN in December 2022. This is notable because while TSN had been prosecuted before based on citizen's claims, this is the first time that governmental institutions took initiated legal action. Evidencing that pressure has successfully travelled from the communicative to the coordinative sphere. These four charges were based on: (1) Intentional dispersion of particles in violation of permit regulations; (2) Discharging wastewater into the company sewer in violation of water law permits; (3) Violating a permit condition and acting against the duty of care in cooling steel slag; (4) Causing black snow due to wind-blown carbon in violation of permit regulations (Openbaar Ministerie, 2022b).

The momentum for change became evident when TSN was found guilty and fined €100,000 for violating environmental regulations, representing the first legal acknowledgment of neglect and permit violations. The tensions in the system were highlighted during the process, when the OM explicitly referred to multiple interests surrounding TSN, including economic, environmental and societal interests (Openbaar Ministerie, 2022b). Once again showing a tug-of-war between the company and its surroundings, but also that policymakers can no longer turn a blind eye to these issues.

In March 2023, the government announced the formation of an expert group on health (Kamerstukken II 2022/23, 29 826, nr. 175), known as the ‘Expertgroup Gezondheid IJmond’. This expert group was partly the outcome of consultations with residents of the IJmond region. Its purpose was to provide independent expertise to contribute to ongoing discussions and quality assurance regarding a potential tailor-made agreement with TSN, along with other measures aimed at promoting health, environmental well-being, and overall living conditions in the IJmond area (Rijksoverheid, 2023b) This constitutes a smoking-gun test for *Y*. Concurrently, while the creation of expert groups is indicative of change, as the topic of TSN emissions is salient in the coordinative policy sphere, it does not constitute the change that pressure groups are seeking. As stated by Voet:

*"I think that collectively, we become so pessimistic when it comes to policies... that I see it a bit as a procrastination method"* (interview 1).

This highlights the lack of trust that individuals and groups had towards the government in making TSN’s business activities sustainable. The lack of trust is sourced from lack of enforcements, power asymmetries and the embedded influence of TSN in the area, which ensured that local residents were scared to actively lobby against TSN, as previously exemplified. Verbrugge further underscores this issue, noting how companies like Tata not only exert control over their surroundings but also employ tactics such as non-disclosure agreements or financial incentives to maintain a grip on dissenting voices (interview 3). The interplay between power asymmetries and lock-in effects, therefore, created a formidable barrier to change within the community (Avelino & Rotmans, 2009; Skocpol & Pierson, 2002). Although the observable institutional developments do not constitute the level of change residents are seeking yet, they still share the view that “*things are changing*” (interview 1, 2 and 3).

#### Enhanced monitoring and enforcement measures

TSN has an obligation to report all pollution incidents; however, there is a noticeable absence of records before May 2023. Despite the earlier placement of cameras by the OD NZKG in February 2023, TSN did not report the incidents. This shows that effective monitoring only took place after Frisse Wind exerted pressure on the government by placing their own cameras in May. As previously stated, Voet emphasised that the cameras installed by Frisse Wind acted as a driver in prompting the government to improve their surveillance approach, exemplifying a direct link between pressure and outcome. The rationale behind this decision was the belief that if a private foundation could implement such monitoring measures, the government should also possess the capability to do so. This claim is backed by empirical

evidence, as the introduction of Frisse Wind's cameras has resulted in a 300 percent increase in reports filed by TSN since their installation. This is corroborated by Nooijen (on behalf of Extinction Rebellion):

*“When residents installed cameras and announced they would immediately send the footage to the Public Prosecution Service, Tata Steel suddenly started reporting incidents in the same week, which they are obligated to do... But this started only when they knew residents had cameras”* (interview 2).

Swiftly following the improved monitoring method, OD NZKG placed two coke gas factories of Tata Steel under intensified supervision in June 2023. Similarly to the citizens' cameras, the municipality placed independent cameras by the factory to collect independent information and enhance monitoring. The environmental service's primary motivation was meeting environmental standards for the well-being of residents. Enhanced monitoring was prompted by continued increased emissions and repeated violations, considering the number of unusual incidents in the past year nearly quintupled (OD NZKG, 2023a). In line with these developments, the OD NZKG stated that TSN must develop an improvement plan and report progress monthly. In case of insufficient improvement, the environmental service threatened additional measures, such as imposing more fines or revoking permits (OD NZKG, 2023b). This suggested a shift in favour of the public in the ongoing power struggle. The governance institution, influenced by the conflicts and power struggles between TSN and the public, became instrumental in shaping the developmental direction of industrial policies (Avelino & Rotmans, 2009).

#### Dutch parliament's push to stop TSN emission rule exception

The observable outcomes culminated with the Dutch Parliament asserting the necessity to terminate the exemption on emission rules for Tata Steel in September 2023. Almost the entire Parliament wanted the government to reverse the EU exception "*as soon as possible*", subjecting Tata Steel to the applicable rules (De Telegraaf, 2023, p.1). EU regulations currently exempt steel and iron factories from certain nitrogen emission rules if they are too old and lack the proper technologies to reduce nitrogen emissions. However, national governments can overturn this, and the Parliament urged the cabinet to do so (De Telegraaf, 2023). The removal of this exception could have significant consequences for the steel plant, potentially leading to the closure of the coke factories. This development follows a week after the RIVM report, which concluded that citizens live an average of 2.5 months shorter due to TSN's emissions (RIVM, 2023b). Whether this is coincidental or not will be discussed in the upcoming section.

Table 8 summarises the results from this section, where all tests were passed. Additionally, evidence for a double-decisive test was found. This leads to the conclusion that there is strong evidence for outcome *Y*.

*Table 8. Hoop test for the outcome Y*

| <b>Pressures</b>  | <b>Hoop test</b> |
|---|------------------|
| Policy-makers voice discontent  | Pass             |
| Policy-makers are able to monitor TSN                                   | Pass             |
| Enforcement measures are implemented when agreements are not adhered to | Pass             |

After an extended period of undisturbed high emissions, TSN found itself in a period of change. This change is most noticeable from June 2020 to October 2023, and is evident by ongoing governmental discussions leading towards a JLoI, as well as increased monitoring and enforcement. Within this agreement, the aspirations outlined in the EoP were translated into concrete intentions and agreements, encompassing binding commitments from both the government and the company. The agreement included additional CO<sub>2</sub> reduction goals, as well as the mitigation of nitrogen and noise, and initiatives to enhance overall living conditions and air quality (Rijksoverheid, 2022). Thus it captured the shared ambitions of the government and the company for clean, green, and circular steel production in the IJmond region. Enforcement mechanisms such as non-compliance fines were also being deployed, diverging from the longstanding historic patterns of violations without consequences. In sum, change is signified by governmental actions regarding TSN in the form of formal agreements, either being discussed or formulated, and enforcement mechanisms.

Many different drivers and pressures have been identified to explain a change in the institutional system on TSN. These have been validly proven to link the causes to the outcome. In short, we have indicated *how* change happened, and in the upcoming section we embed the findings in the literature to uncover *why* this causal chain has led to a critical juncture.



## 6. Analysis

This thesis aims to uncover the causal link between increasing health and environmental concerns surrounding TSN and change in governance in the Netherlands. Based on the empirical findings, the hypothesis can be confirmed and the following two conclusions can be drawn. Firstly, the hypothesis can be confirmed as the convergence of three pressures (expert knowledge, mobilisation, and salience) triggered changes in the Dutch policy institution concerning TSN. While individual pressures were noticeable previously, significant policy-making, enforcement, and monitoring only occurred when all three pressures were concurrently present. This corresponds with PET, where continuous observations of singular pressures in the system were evident, but transformative changes occurred only when all three pressures converged, leading to sharp and explosive policy shifts. Secondly, agency is instrumental in explaining policy changes towards TSN. The actor-centred approach underscores the role of key actors in the communicative sphere, such as Benedicte Ficq, Frisse Wind, protestors, residents, but also those in the coordinative sphere like ministers Van 't Wout and Moorlag. Furthermore, the institutional setting in which expert knowledge was shared and utilised proved instrumental in triggering change.

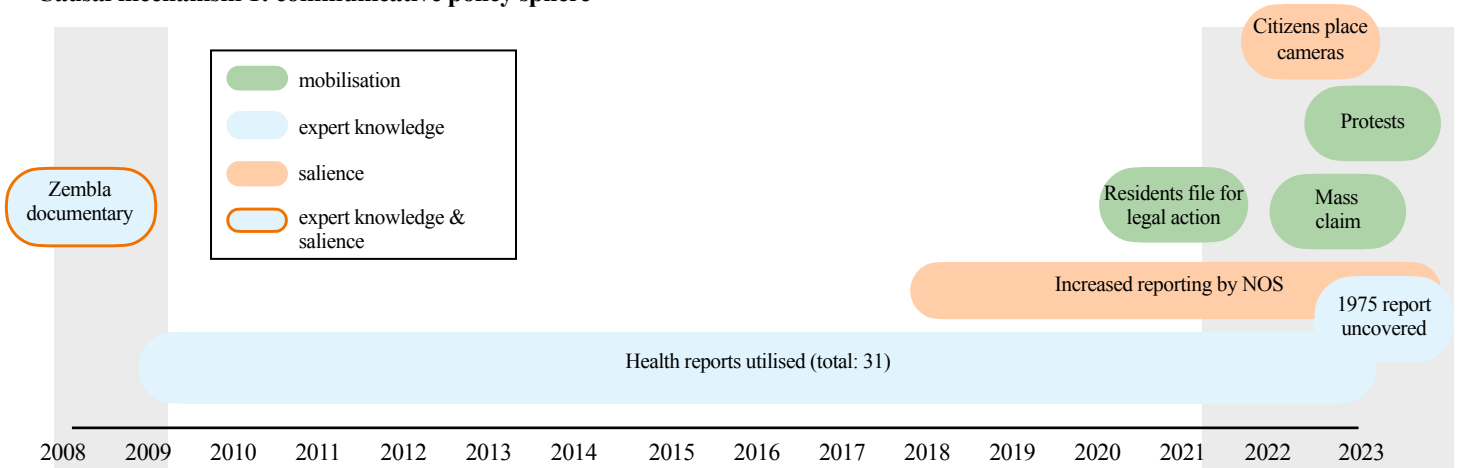
### 6.1 Expert knowledge, mobilisation and salience must coexist to trigger change

HI contends that history is comprised of prolonged stability and critical junctures, requiring significant pressure to instigate change (Rocco & Thurston, 2014). More specifically, PET explains that the rate of change can swiftly escalate when significant societal events occur, leading to profound shifts in public policy. Drawing on the literature, Kelley and Simmons (2015) state that knowledge and mobilisation can act as a trigger for policy changes. Expert knowledge shapes and disseminates ideas and research evidence is more frequently utilised to shape health policy (World Health Organization, 2005), while mobilisation can help regime opponents collectivise followers and disseminate information designed to delegitimise the status quo, displace the existing institutional rules and facilitate convergence toward a common goal (Ferrara, 2022; Zara & Delacour, 2021). Building on this, Culpepper (2010) emphasises that heightened salience can act as a driving force. As salience increases, business power diminishes, and public concern gains influence in shaping policy outcomes. As previously explained, existing research typically focuses on one or two of the pressures — expert knowledge, mobilisation, and salience — which is insufficient to compel policy changes, instead resulting in a state of dynamic equilibrium. This leaves the role of multiple combined pressures understudied. As such, this thesis widens the scope by examining their combined pressures. The results have been visualised in figure 7 below.

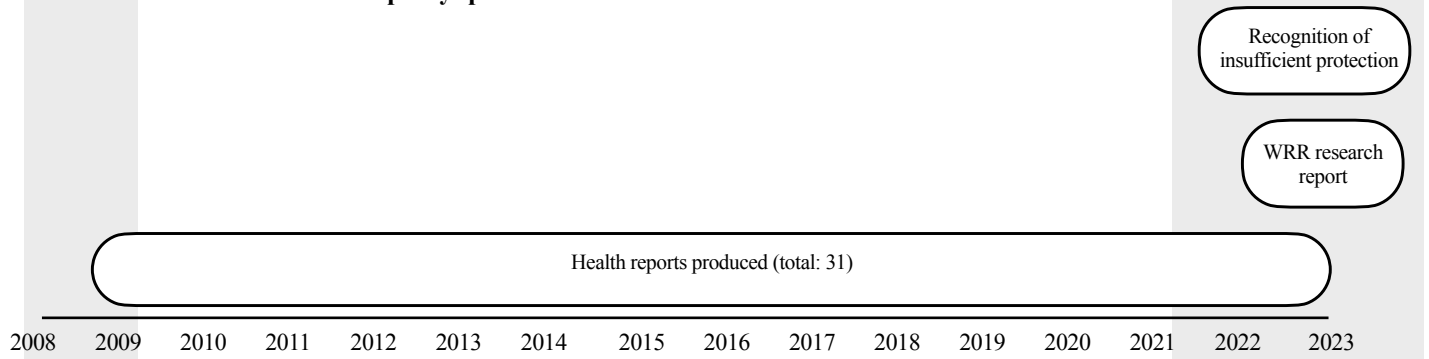
Examining the absence of significant change during the first critical juncture in 2008 reveals instances of power imbalances across different historical points, aligning with historical institutional perspectives that view institutions as reflections of past political struggles (Mahoney & Thelen, 2010). The first identified critical juncture, was triggered by the Zembra documentary. It heightened salience and prompted the government to initiate research on TSN. Bromley-Trujillo and Poe (2020) explain that an increase in salience should lead to policy responses from the state, however it is not guaranteed. This is exactly what could be observed because despite the presence of salience and expert knowledge, the lack of mobilisation rendered this moment insufficient to disrupt the prevailing status quo. Instead, dynamic equilibrium persisted as the policy system self-corrected towards the powerful interests of TSN (Baumgartner & Jones, 1993). Challenges to the policy image were downplayed within the subsystem at the time, acting as negative feedback to sustain dynamic equilibrium. Additionally, the presence of opportunists and the substantial influence of TSN in the region empowered the steel giant to promote its advantages, creating a self-reinforcing loop that contributed to the continuation of coke fabric 1 and 2 operations (Skocpol & Pierson, 2002). Despite the availability of cleaner technologies like hydrogen, this moment dictated a lock-in of high-emissions, sustained by government support over the subsequent decade. In cases where institutions resist change, stability prevails (Hall, 1986). Therefore, significant change within a small time frame was not evident.

Up until 2020, governance was committed to suboptimal outcomes. However, with a growing recognition of the impact of pollutants and hazardous substances on public health, the purpose of IP was undergoing a shift toward a more comprehensive definition aimed at enhancing overall living standards. In 2020 the first signs of change emerged, in terms of government rhetoric, more monitoring and enforcement. This development, emphasising government intervention for environmental sustainability, exemplifies a departure from conventional industrial policy approaches, integrating the key concept of path dependency to steer economic trajectories towards environmentally sustainable alternatives. This critical juncture was initiated by the motion Moorlag and the system has still not stabilised since the JoI has not been signed yet, meaning that we have not departed from the window of change. During this period, all three pressures could be identified, which resulted in a critical juncture.

**Causal mechanism 1: communicative policy sphere**



**Causal mechanism 2: coordinative policy sphere**



**Outcome: institutional developments**

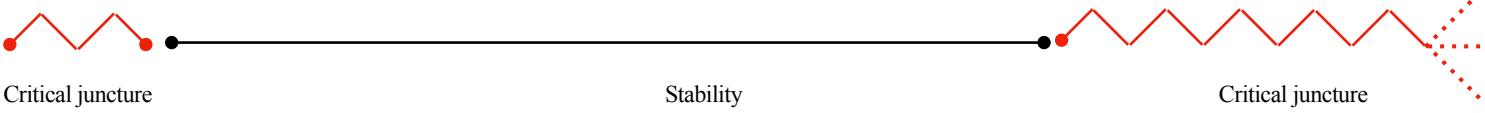
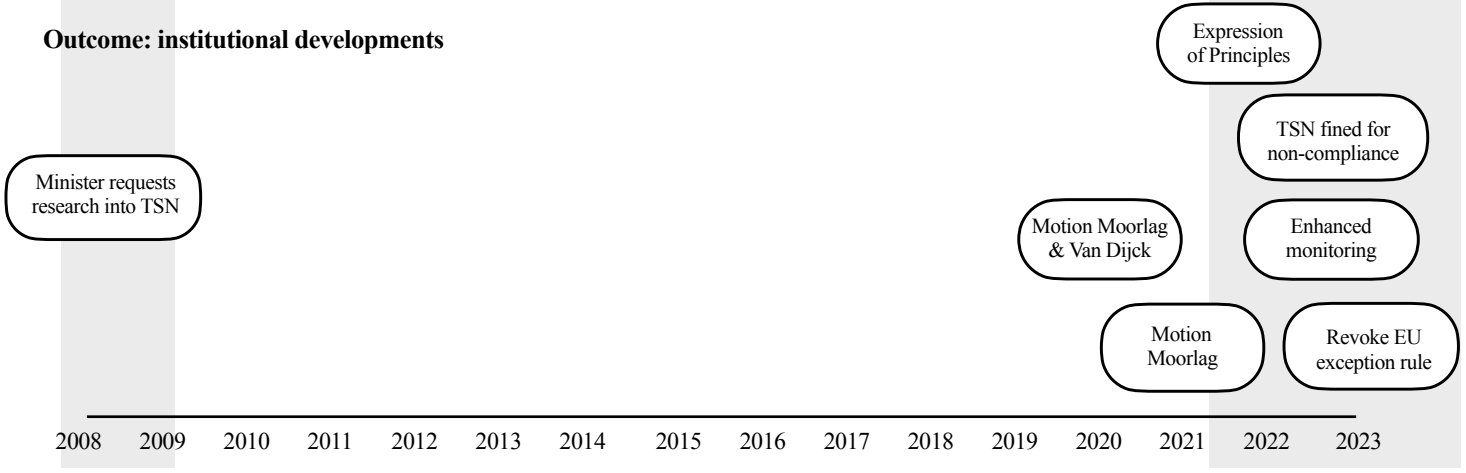


Figure 7. Causal mechanisms and institutional developments at play in the TSN case

The occurrence of change at this specific time, as opposed to more than a decade earlier, can be attributed to the interplay of increased expert knowledge, mobilisation, and salience within the communicative sphere which created a synergistic effect. This highlights the sudden and impactful shifts in the policy

landscape in line with Baumgartner and Jones' (1993) PET. These three pressures work together, mutually reinforcing one another through a reciprocal relationship and creating significant pressure to speed up the rate of change. With the influx of more expert knowledge, actors could formulate and disseminate ideas effectively to identify shared interests and maintain the salience of TSN health effects, thereby aiding mobilisation efforts. Simultaneously, mobilisation played a crucial role in sustaining the salience of the issue and fuelling the demand for additional expert knowledge. Similarly, increased salience facilitated the recruitment of individuals for mobilisation, acting as an incentive for the generation and dissemination of more expert knowledge.

Firstly, expert knowledge was consistently fed into the system through RIVM and GGD reports, resurfacing of old reports and cameras collecting information on pollution incidents. In accordance with Ferrara (2022), expert knowledge on the effects of emissions helped to assess the effectiveness of safety measures in place. Notably research evidence in health policy has gained prominence in the literature as a growing influence of expertise (Béland, 2010). After evidence showed that the pollution levels were detrimental to the living environment, the expert knowledge generated from the reports acted as a catalyst for change by shaping and disseminating ideas amongst local residents and the wider public, conform to Schmidt's (2008) framework of DI and Thelen (2002).

Secondly, increased mobilisation was evident through residents' legal actions, protests and a mass claim against TSN. This aligns with the theory proposed by Baumgartner and Jones (1993), where one group's political advantage prompts others to mobilise, thereby creating negative-feedback processes. Mobilisation served as a tool for activist groups and foundations, helping them to gather followers, sign up to the mass claim and disseminate expert knowledge to challenge safety measures and delegitimise TSN. The residents and pressure groups mobilising against TSN aimed to collectively push for sustainable changes in TSN's operations. This shows that counter-movements can create change (Kende et al., 2016; Thomas et al., 2017, 2019) through collective action to delegitimise the status quo in line with Ferrara (2022) and Zara et al. (2020).

Thirdly, the increased media attention aligns with research by Junk (2019), suggesting that when a policy issue garners significant public attention, officials tend to be more cautious, adapting their decision-making process to avoid reputational issues and ensure successful approval and implementation of legislation. The heightened salience in media coverage surrounding TSN contributed to triggering a policy response, as public officials were more attuned to addressing the concerns and repercussions

associated with the unfolding situation. As per Culpepper (2011), the heightened salience through media coverage of TSN played a role in decreasing the influence of business power, thereby allowing public concerns to open up the policy-making space, giving them more power to shape policy outcomes.

The causal chain then extended to the coordinative sphere, where actors who are close to the government exerted pressure on the government. The Safety Investigation Board and the WRR have direct access to the policy-making institution as advisory bodies. They published reports urging improved government measures to safeguard residents from harmful industrial emissions and recommended to revise Dutch IP by ending favourable treatment of established players and fostering innovation to address societal challenges. As the institutional model of science communication explains, these experts provide governments with concrete recommendations to facilitate informed decision-making for the tailor-made agreement (Van Dijk & Alinead, 2020). This is different to the RIVM reports, which only provided new expert knowledge in the system without providing concrete recommendations. Positioned at the heart of policy construction, changes in this sphere reflect the travelling of pressures leading to institutional change.

Finally, institutional change materialised through governmental actions concerning TSN, taking the form of formal agreements (EoP, JoI), discussions, formulations, and the implementation of monitoring and enforcement mechanisms. This transformation was preceded by various parliamentary motions, fines, the installation of cameras, and most recently, a parliamentary directive urging the government to revoke the European exception rule for TSN.

Why is this considered a change? The rules and procedures governing TSN have undergone significant shifts, displaying noticeable deviations from the patterns observed a decade ago (Huntington, 1965; Rocco & Thurston, 2014). The policy image surrounding TSN has evolved from being solely an economic concern to a broader consideration of environmental issues. More specifically, TSN is subject to the *maatwerkafpraak*, marking a significant departure from the status quo. This signifies a transition toward green IP, in which non-compliance with this new IP entails consequences for TSN. These changes were the product of external pressures, evident right before and during shifts in governance responses. The pressures being more expert knowledge, mobilisation, and heightened salience, which challenged the prevailing status quo and influenced governmental responses. This critical juncture was initiated by the motion Moorlag in 2020, and the system has still not stabilised yet given that the JoI still has to be signed. The ongoing critical juncture is evident, as new feedback mechanisms within the

system are still in progress. A key indicator is the pending signing of the JoI, signifying that the window for change has not yet closed.

## **6.2 Agency is instrumental in explaining institutional change**

Capoccia (2015) emphasises the critical role of agency during periods of exogenous critical junctures, asserting that in such times, agency is often surprisingly unconstrained. In alignment with the perspectives of DiMaggio (1988) and Schmidt (2011b), we have expanded the scope of HI to incorporate agency as a crucial factor in elucidating the dynamics of institutional change surrounding TSN. Including the role of individuals and groups in this case study allows for a thicker description of the causal mechanisms that led to change in the policy sphere of green industrial policy targeting TSN.. Without the inclusion of agency, we would not be able to explain how the communicative force of ideas that underpin the interactions between pressure groups and the government. Agency was included in two ways: by examining the role of groups, and by exploring the interaction between communicative and coordinative policy spheres.

Firstly, this expansion involves the role of individuals and groups by recognising their capacity to exert significant pressure on policy-makers. Instances of observed pressures include the installation of cameras, protests or through the initiation of mass claims. Emmenegger (2021) argues that agency is pivotal in the establishment and maintenance of social coalitions. Pressure groups, including Frisse Wind and Extinction Rebellion, leveraged agency by actively utilising their capacity for influence. They employed various forms of mobilisation, expert knowledge and salience tactics to challenge the rules governing TSN.

In the case of TSN, the concept that without a supportive coalition no institution can endure is demonstrated (Emmenegger, 2021). As the support for TSN rapidly diminished, the imperative for change within the policy-making institution became evident. Failing to respond to the changing attitudes towards TSN posed a significant risk to the government in terms of public backing. Officials within the government who may have initially adopted opportunist roles found themselves compelled to change their stance. The risk of losing future support forced these officials to adapt to the evolving landscape, recognising that continued backing from the public was contingent on addressing the concerns raised by the pressure groups and residents. This agrees with Rothstein (2005) who explains that institutions undergo changes aligned with prevailing perceptions.

Secondly, DI not only looks at the communication of ideas, but also the institutional context in which ideas are shared. In this case, agency can best be organised according the coordinative and communicative policy spheres. Schmidt (2011a) explained that the typical directional flow of influence with environmentalist issues flows bottom-up, from the communicative to the coordinative policy sphere. This pattern is observable in our case study, where pressure emanated from interest groups and was exerted on the government. For example, in an attempt to enhance accountability, Frisse Wind deployed cameras to monitor pollution originating from TSN. Subsequently, TSN's reporting increased by 300 percent that same week. It became evident that TSN's reporting and government monitoring only ensued after pressure groups took proactive measures, highlighting the bottom-up directionality of interaction between the communicative to the coordinative policy sphere. In sum, the strategic consolidation of sectional interests in the communicative sphere illustrates how enhanced collective efforts can influence the coordinative sphere. An exception to this directional flow is expert knowledge, originating in the coordinative sphere and subsequently adopted by actors in the communicative sphere for utilisation in their pressure tactics. Consequently, until knowledge is picked upped by politicians, it is not dominant in the coordinative sphere. The assimilation of ideas generated in the communicative sphere by actors in the coordinative sphere is crucial, as the presence of ideas in both spheres is necessary to elucidate changes in industrial policy (Schmidt, 2010b).

## 7. Conclusion

This thesis was guided by the following research question: *How have increasing health and environmental concerns regarding TSN triggered institutional change in the Netherlands during the period 2009-2023?* This study has attempted to trace *how* and *why* processes of institutional change in Dutch governance towards TSN occurred and unfolded over time. Change could be identified by the steel manufacturer being subject to the *maatwerkafpraak*, marking a significant departure from historical patterns of government intervention. This was paired with more monitoring and enforcement mechanisms to ensure the company adheres to the new green industrial vision of the Netherlands. Through the analysis of governmental and parliamentary documents, health reports, news reports, and interviews, the political developments surrounding TSN have been analysed. The collected evidence provided a through chain of causal mechanisms and analysis of events.

The answer to the question is rooted in HI, which explains that processes over time contribute to the establishment and perpetuation of stability and change (Skocpol & Pierson, 2002). The literature frequently cites expert knowledge utilisation, mobilisation and salience as significant pressures, however never considers all three in tandem (e.g. Kelley & Simmons, 2015; Culpepper, 2010). Aligning with Rocco and Thurston (2014) that significant pressure is required to trigger change, we contend that all three pressures must coexist in order to bring about change. Although health and news reports about TSN were being published in 2008, the first identified critical juncture did not lead to significant change due to a lack of mobilisation in the system. Instead this led to a state of dynamic equilibrium followed by the persistence of newfound stability, as Baumgartner and Jones's (1993) PET predicts. Concurrently, the coexistence of the three pressures mutually reinforcing one another from 2020 onwards explains why change was triggered. A significant limitation of HI is its oversight of agency, which is particularly relevant during exogenous critical junctures (DiMaggio, 1988; Schmidt, 2011b; Capoccia, 2015). Attention was specifically given to the directionality of pressure, asserting that it primarily moves from the communicative to the coordinative sphere (Schmidt, 2023). In the case of TSN, diverse political actors such as local residents, foundations, and the media employed various pressure tactics, resulting in direct responses in the coordinative sphere. As pressure mounted on institutions, the policy-making space opened up for political actors and TSN's influence waned, resulting in policy makers being more inclined to meet societal expectations by opting for sustainable alternatives.



The thesis addresses gaps in literature regarding sudden policy changes towards TSN, injecting agency into HI analysis, and combining three causal mechanisms. The societal impact lies in unveiling the fight against TSN as a precedent for holding companies accountable, aiding other groups in effecting change, as well as its examination of how Dutch policy change unfolds and the diverse pressures (such as health and environmental concerns) that contributed to this evolution. This implies that the ongoing change in the system, as evident in these findings, is confirmed and explained. Interest groups possess the ability to exert influence within the system, leveraging momentum to consistently advocate for change and thereby making a significant impact.

The study encountered notable limitations, primarily due to data and time constraints. Firstly, NOS articles are available only up to 2010. This restricted our ability to use the number of reports as an indicator for salience throughout the entire examined timeframe. This means we could not compare the period of the first critical juncture to the second critical juncture. Nevertheless, the data permitted us to demonstrate an overall increasing trend in salience, making the results valid. Furthermore, time constraints hindered the identification of which pressure was most influential, but discovering various mechanisms proved valuable, opening avenues for future research to delve deeper into this aspect. Subsequent studies could build upon our work by examining the ongoing critical juncture in its entirety. The evidence, such as the pending outcome of the mass claim, indicates that the critical juncture is still ongoing, suggesting a need to revisit and extend this study in the coming years once the institution has stabilised.

This research underscores the capacity of interest groups to influence the system and capitalise on momentum to consistently advocate for change, facilitating the promotion of green industrial policies. In the TSN case, actors in the communicative sphere effectively employed expert information, increased salience, and mobilisation to exert pressure on the policymaking institution. This culminated in the establishment of *maatwerkafspraken*, strengthened enforcement, and heightened monitoring by the government to align the company with the Netherlands' new green industrial vision. The case illustrates that substantial pressure on policymakers can lead to meaningful change. In the current global context of sustainability challenges, political actors can actively play a role in triggering more sustainable policies and holding companies accountable, as exemplified by this case.

## Reference list

- AD (2023). Tata Steel wijst massaclaim af. 'Het was njet, njet, njet', dus nu naar de rechter'. AD. <https://www.ad.nl/binnenland/tata-steel-wijst-massaclaim-af-het-was-njet-njet-njet-dus-nu-naar-de-rechter~a98416e7/>
- AD (2023). Klimaatactivisten na zes uur vrijwillig vertrokken bij Tata Steel. AD. <https://www.ad.nl/binnenland/klimaatactivisten-na-zes-uur-vrijwillig-vertrokken-bij-tata-steel~a0dcd15a/>
- Adriaansens, M.A.M. (2023). *Voortgang maatwerkafspraken*. Ministerie van Economische Zaken en Klimaat. <https://open.overheid.nl/documenten/ronl-29c47ebdd1f57646a468c5b6735aa990440c702f/pdf>.
- Aiginger, K. (2007). Industrial Policy: Past, Diversity, Future; Introduction to the Special Issue on the Future of Industrial Policy. *Journal of Industry, Competition and Trade*, 7(3), 143-146. doi: 10.1007/s10842-007-0027-z
- Aiginger, K. (2012) : A Systemic Industrial Policy to Pave a New Growth Path for Europe, WIFO Working Papers, No. 421, Austrian Institute of Economic Research (WIFO). <http://hdl.handle.net/10419/129006>
- Aiginger, K. (2014). Industrial Policy for a Sustainable Growth Path (WIFO Working Papers, No. 469). Austrian Institute of Economic Research (WIFO). <http://hdl.handle.net/10419/129024>
- Aiginger, K., Bärenthaler-Sieber, S., & Vogel, J. (2015). Competitiveness under New Perspectives. DOI: 10.13140/RG.2.1.1003.1525. [https://www.researchgate.net/publication/275757800\\_Competitiveness\\_under\\_New\\_Perspectives](https://www.researchgate.net/publication/275757800_Competitiveness_under_New_Perspectives)
- Aghion, P., Howitt, P., & Murin, F. (2011). The Relationship Between Health and Growth: When Lucas Meets Nelson-Phelps. *Review of Economics and Institutions*, 2(1). DOI: 10.5202/rei.v2i1.22. [https://www.researchgate.net/publication/227471640\\_The\\_Relationship\\_Between\\_Health\\_and\\_Growth\\_When\\_Lucas\\_Meets\\_Nelson-Phelps](https://www.researchgate.net/publication/227471640_The_Relationship_Between_Health_and_Growth_When_Lucas_Meets_Nelson-Phelps)
- Albareda, A., Braun, C., & Fraussen, B. (2023). Explaining why public officials perceive interest groups as influential: On the role of policy capacities and policy insidership. *Policy Science*, 56(2), 191–209. <https://doi.org/10.1007/s11077-023-09491-9>
- Altenburg, T. & Rodrik J. (2017). Green industrial policy: accelerating structural change towards wealthy green economies. Deutsche Institut für Entwicklungspolitik. [https://drodrik.scholar.harvard.edu/files/dani-rodrik/files/altenburg\\_rodrik\\_green\\_industrial\\_policy\\_webversion.pdf](https://drodrik.scholar.harvard.edu/files/dani-rodrik/files/altenburg_rodrik_green_industrial_policy_webversion.pdf)
- Armstrong McKay, D. I., A. Staal, J. F. Abrams, R. Winkelmann, B. Sakschewski, S. Loriani, I. Fetzer, S. E. Cornell, J. Rockström, & T. M. Lenton. (2022). Exceeding 1.5°C global warming could trigger multiple climate tipping points. *Science*, 377, eabn7950. <https://doi.org/10.1126/science.abn7950>
- Avelino, F., & Rotmans, J. (2009). Power in transition: An interdisciplinary framework to study power in relation to structural change. *European Journal of Social Theory*, 12(4), 543–569.

- Barnet, C., & Munslow, T. (2014). Process Tracing: The Potential and Pitfalls for Impact Evaluation in International Development. Evidence Report No. 102. Policy Anticipation, Response and Evaluation. Brighton: IDS.
- Baumgartner, F. & Jones, B. (1993). Agendas and instability in American politics. American politics and political economy. Chicago: University of Chicago Press.
- Becker, J. C. (2020). Ideology and the promotion of social change. *Current Opinion in Behavioral Sciences*, 34, 6–11. <https://doi.org/10.1016/j.cobeha.2019.10.005>
- Binderkrantz, A. S., & Rasmussen, A. (2015). Comparing the domestic and the EU lobbying context: Perceived agenda-setting influence in the multi-level system of the European Union. *Journal of European Public Policy*, 22(4), 552–569.
- Bivens, J. (2023). The industrial policy revolution has begun, but another is still needed: Industrial policy and policies to rebalance labor market power are complements, not substitutes. Economic Policy Institute. <https://www.epi.org/publication/industrial-policy/>
- Beach, D., & Pedersen, R. (2013). Process-tracing methods: Foundations and guidelines. Ann Arbor, MI: University of Michigan Press. <https://doi.org/10.3998/mpub.2556282>
- Béland, D. (2010). Policy change and health care research. *Journal of health politics, policy and law*, 35(4), 615-641.
- Beyer, D., Breunig, C., Green-Pedersen, C., et al. (2022). Punctuated Equilibrium and the Comparative Study of Policy Agendas. *Polit Vierteljahresschr*, 63(3), 275–294. <https://doi.org/10.1007/s11615-022-00400-y>
- Blatter, J., & Haverland, M. (2012). Designing case studies : Explanatory approaches in small-n research. Palgrave Macmillan.
- Bromley-Trujillo, R., & Poe, J. (2020). The importance of salience: public opinion and state policy action on climate change. *Journal of Public Policy*, 40(2), 280–304. doi:10.1017/S0143814X18000375
- Brunsson, N. 1989. The Organization of Hypocrisy. Chichester: Wiley.
- Busch, J., Foxon, T. J., & Taylor, P. G. (2018). Designing industrial strategy for a low carbon transformation. *Environmental Innovation and Societal Transitions*, 29, 114-125. <https://doi.org/10.1016/j.eist.2018.07.005>
- BNNVara (2023). Wat speelt er allemaal rondom Tata Steel? Een overzicht. BNNVara. <https://www.bnnvara.nl/zembla/artikelen/wat-speelt-er-allemaal-rondom-tata-steel-een-overzicht>
- Byrne, D., & Gill, C. (2013). Complexity Theory and the Social Sciences: The state of the art. <https://doi.org/10.4324/9780203519585>
- Campbell, J. L. (1998). Institutional analysis and the role of ideas in political economy. *Theory and Society*, 27(3), 377–409.
- Campbell, J.L. (2002) Ideas, politics, and public policy, *Annual Review of Sociology*, 28: 21–38 doi: 10.1146/annurev.soc.28.110601.141111
- Capano, G., & Howlett, M. (2019). Causal logics and mechanisms in policy design: How and why adopting a mechanistic perspective can improve policy design. *Public Policy and Administration*, 1–22. <https://doi.org/10.1177/0952076719827068>

- Capoccia, G., & Kelemen, R. D. (2007). The Study of Critical Junctures: Theory, Narrative, and Counterfactuals in Historical Institutionalism. *World Politics*, 59(3), 341–369.  
<http://www.jstor.org/stable/40060162>
- Capoccia, G. (2015). Critical junctures and institutional change. In J. Mahoney & K. Thelen (Eds.), *Advances in comparative-historical analysis* (pp. 147–179). Cambridge: Cambridge University Press.
- Chang, H. (2002). *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem.
- Climate Council (2018). Draft Integrated National Energy and Climate Plan 2021-2030.  
[https://energy.ec.europa.eu/system/files/2019-03/netherlands\\_draftnecp\\_en.pdf\\_0.pdf](https://energy.ec.europa.eu/system/files/2019-03/netherlands_draftnecp_en.pdf_0.pdf)
- Collier, D. (2011). Understanding Process Tracing. *Political Science and Politics*, 44(4), 823-830.  
<https://doi.org/10.1017/S1049096511001429>
- Culpepper, P. D. (2010). *Quiet Politics and Business Power: Corporate Control in Europe and Japan*. New York: Cambridge University Press.
- Davies, I. (1970). Mobilization, Mobility and Political Development. In: *Social Mobility and Political Change. Key Concepts in Political Science*. Palgrave, London.  
[https://doi.org/10.1007/978-1-349-00920-6\\_4](https://doi.org/10.1007/978-1-349-00920-6_4)
- Daviter, F. (2015). The political use of knowledge in the policy process. *Policy Sci* 48, 491–505.  
<https://doi.org/10.1007/s11077-015-9232-y>
- De Ruijter, Paul A. and Batten, Ron E., Fifty Years of Industrial Policy in the Netherlands: Origins and Legitimacy of Motives for Industrial Policy (December 31, 1999).  
<http://dx.doi.org/10.2139/ssrn.2221977>
- De Telegraaf (2023). Kamer wil einde aan uitzonderingspositie voor Tata Steel. De Telegraaf.  
[www.telegraaf.nl/nieuws/415624854/kamer-wil-einde-aan-uitzonderingspositie-voor-tata-steel](http://www.telegraaf.nl/nieuws/415624854/kamer-wil-einde-aan-uitzonderingspositie-voor-tata-steel)
- De Waal, L. (1998). The Dutch Poldermodel. *Industrial Relations as a Win–Win Game*. Speaking notes presentation The Hague <http://www.fnv.nl/toespraak/>
- DiMaggio, P. J. (1988). Interest and Agency in Institutional Theory. In L. G. Zucker (Ed.), *Institutional patterns and organizations: Culture and environment* (pp. 3–21). Cambridge: Ballinger.
- DiMaggio, P. J. and Powell, W. W. (1991). “Introduction”. In *The New Institutionalism in Organizational Analysis*, Edited by: Powell, W. W. and DiMaggio, P. J. 1 – 38. Chicago: University of Chicago Press.
- Dür, A., Bernhagen, P., & Marshall, D. (2015). Interest group success in the European Union. *Comparative Political Studies*, 48(8), 951–983.
- EenVandaag (2023). Nieuw opgedoken rapport toont aan: hoge concentratie kankerverwekkende stoffen bij Hoogovens (Tata Steel) al sinds jaren 70 bekend. EenVandaag. <https://eenvandaag.avrotros.nl/item/nieuw-opgedoken-rapport-toont-aan-hoge-concentratie-kankerverwekkende-stoffen-bij-hoogovens-tata-steel-al-sinds-jaren-70-bekend/>
- Emmenegger, P. (2021). Agency in historical institutionalism: Coalitional work in the creation, maintenance, and change of institutions. *Theor Soc*, 50(6), 607–626.  
<https://doi.org/10.1007/s11186-021-09433-5>

- Epstein, L. & Segal, J.A. (2000). Measuring Issue Salience. *American Journal of Political Science* 44, 66–83.
- Ferrara, F. (2022). Institutional Change: The Incremental Logic of Political Development. In *The Development of Political Institutions: Power, Legitimacy, Democracy* (pp. 109–156). University of Michigan Press. <http://www.jstor.org/stable/10.3998/mpub.12013333.7>
- Fioretos, O., Falleti, T. G., & Sheingate, A. (2016). Historical institutionalism in political science. In O. Fioretos et al. (Eds.), *The Oxford handbook of historical institutionalism* (pp. 3–28). Oxford: Oxford University Press.
- Frisse Wind (2023). Over FrisseWind.nu. Frisse Wind.nu! <https://www.frissewind.nu/wie>
- Gilardi, F., & Wasserfallen, F. (2019). The politics of policy diffusion. *European Journal of Political Research: Official Journal of the European Consortium for Political Research.*, 58(4), 1245–1256. <https://doi.org/10.1111/1475-6765.12326>
- Glasbergen, P. (2002). The green polder model: institutionalizing multi-stakeholder processes in strategic environmental decision-making. *European Environment*, 12(6), 303–315. <https://doi.org/10.1002/eet.297>
- Government of the Netherlands (2019). Climate policy. <https://www.government.nl/topics/climate-change/climate-policy>
- Haar, L. (2014). Do patterns of trade and international competitiveness support the case for industrial policy? *Policy Studies, Taylor & Francis Journals*, vol. 35(3), pages 221-245. DOI: 10.1080/01442872.2014.886680
- Hacker J. (2004). Privatising risk without privatising the welfare state: The hidden politics of social policy retrenchment in the United States. *American political science review* 98(2): 243-260.
- Hall, P. A., & Taylor, R. C. R. (1996). Political science and the three new institutionalisms. *Political Studies*, 44, 936–957. <https://doi.org/10.1111/j.1467-9248.1996.tb00343.x>
- Huntington, S. P. (1996). *Political Order in Changing Societies*. Yale University Press. <http://www.jstor.org/stable/j.ctt1cc2m34>
- Junk, W. M. (2019). When diversity works: The effects of coalition composition on the success of lobbying coalitions. *American Journal of Political Science*, 63(3), 660–674. <https://doi.org/10.1111/ajps.12437>
- Katznelson, I. (2003). Periodization and preferences: Reflections on purposive action in comparative historical social science. In *Comparative historical analysis in Social Science*, ed. James Mahoney and Dietrich Rueschemeyer 270-301 New York: Cambridge University Press.
- Kelley, J. G., & Simmons, B. A. (2015). Politics by Number: Indicators as Social Pressure in International Relations. *American Journal of Political Science*, 59(1), 55-70. <https://www.jstor.org/stable/24363596>
- Kende, A., Tropp, L., & Lantos, N. A. (2016). Testing a contact intervention based on intergroup friendship between Roma and non-Roma Hungarians: Reducing bias through institutional support in a non-supportive societal context. *Journal of Applied Social Psychology*, 47(1). <https://doi.org/10.1111/jasp.12422>

- Keys, A., van Hout, M., & Daniëls, B. (2019). Decarbonisation options for the Dutch steel industry. [https://www.pbl.nl/uploads/default/downloads/pbl-2019-decarbonisation-options-for-the-dutch-steel-industry\\_3723.pdf](https://www.pbl.nl/uploads/default/downloads/pbl-2019-decarbonisation-options-for-the-dutch-steel-industry_3723.pdf)
- Klüver, H. (2011). The contextual nature of lobbying: Explaining lobbying success in the European Union. *European Union Politics*, 12(4), 483–506. <https://doi.org/10.1177/1465116511413163>
- Kushnir, D., Hansen, T., Vogl, V., & Åhman, M. (2020). Adopting hydrogen direct reduction for the Swedish steel industry: A technological innovation system (TIS) study. *Journal of Cleaner Production*, 242, 118185. <https://www.sciencedirect.com/science/article/pii/S0959652619330550>
- Langley, J., Wolstenholme, D., & Cooke, J. (2018). 'Collective making' as knowledge mobilisation: the contribution of participatory design in the co-creation of knowledge in healthcare. *BMC Health Services Research*, 18(1), 585. <https://doi.org/10.1186/s12913-018-3397-y>
- Lax, J.R. & Phillips, J.H. (2012) The Democratic Deficit in the States. *American Journal of Political Science* 56, 148–166.
- Lockwood, M., Kuzemko, C., Mitchell, C., & Hoggett, R. (2017). Historical institutionalism and the politics of sustainable energy transitions: A research agenda. *Environment and Planning C: Politics and Space*, 35(2), 312-333. <https://doi.org/10.1177/0263774X16660561>
- Luetkenhorst, W., Altenburg, T., Pegels, A., & Vidican Auktor, G. (2014). Green Industrial Policy: Managing Transformation under Uncertainty. *Economic Policy, Public Economics, Industrial Policy, Working Paper*. <https://doi.org/10.13140/2.1.1706.7529>
- Mahoney, C. (2007). Lobbying Success in the United States and the European Union. *Journal of Public Policy*, 27(1), 25–56. <https://doi.org/10.1017/S0143814X07000608>
- Mahoney J. (2012). The Logic of Process Tracing Tests in the Social Sciences. *Sociological Methods & Research* 41:570–97.
- Mahoney, J., & Goertz, G. (2006). A Tale of Two Cultures: Contrasting Quantitative and Qualitative Research. *Political Analysis* 14: 227–249.
- Mahoney, J., & Schensul, D. (2006). Historical context and path dependence. *The Oxford Handbook of Contextual Political Analysis*. Oxford University Press.
- Mahoney, J., & Thelen, K. (2009). A Theory of Gradual Institutional Change. In *Explaining Institutional Change: Ambiguity, Agency, and Power* (pp. 1–37). chapter, Cambridge: Cambridge University Press.
- Mahoney J. & Thelen K. (2010). A Theory of Gradual Institutional Change. In Mahoney J. and Thelen K. (eds.), *Explaining Institutional Change: Ambiguity ; Agency and Power*. New York, NY: Cambridge University Press, 1-37.
- Mahoney, J., & Thelen, K. (2015). *Advances in comparative-historical analysis*. Cambridge: Cambridge University Press.
- Majone, G. (1989). *Evidence, Argument and Persuasion in the Policy Process*, New Haven, CT : Yale University Press
- March, J. G., & Olsen, J. P. (1989). *Rediscovering Institutions: The Organizational Basis of Politics*. Free Press. [https://books.google.nl/books/about/Rediscovering\\_Institutions.html?id=FrpzIAEACAAJ&redir\\_esc=y](https://books.google.nl/books/about/Rediscovering_Institutions.html?id=FrpzIAEACAAJ&redir_esc=y)

- March, J. G., & Olsen, J. (1995). *Democratic Governance*. Free Press. [https://books.google.nl/books/about/Democratic\\_Governance.html?id=kxGDAAAAMAAJ&redir\\_esc=y](https://books.google.nl/books/about/Democratic_Governance.html?id=kxGDAAAAMAAJ&redir_esc=y)
- Matson, P., Clark, W. C., & Andersson, K. (2016). *Pursuing Sustainability: A Guide to the Science and Practice*. Princeton University Press.
- Mazzucato, M. (2013). *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. London: Anthem. <http://digamo.free.fr/mazzucato.pdf>
- Mazzucato, M. (2015). The green entrepreneurial state. In I. Scoones, M. Leach, P. Newell (Eds.), *The Politics of Green Transformations* (pp. 134-152). Routledge, New York. <https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781315747378-9/green-entrepreneurial-state-mariana-mazzucato>
- Mildenberger, M. (2020). *Carbon captured : how business and labor control climate politics*. The MIT Press.
- Moniz, P., & Wlezien, C. (2020). Issue Salience and Political Decisions. *Oxford Research Encyclopedia of Politics*. <https://doi.org/10.1093/acrefore/9780190228637.013.1361>
- Moorlag, W. (2020). *Motie van het lid Moorlag*. Tweede Kamer der Staten-Generaal. <https://zoek.officielebekendmakingen.nl/kst-33009-87.pdf>.
- Moorlag, W. & Van Dijk, G. (2021). *Motie van de leden Moorlag en Gijs van Dijk*. Tweede Kamer der Staten-Generaal. [https://www.eerstekamer.nl/behandeling/20210225/motie\\_van\\_de\\_leden\\_moorlag\\_en\\_gijs/document3/f=/vlgnh9kzlktyt.pdf](https://www.eerstekamer.nl/behandeling/20210225/motie_van_de_leden_moorlag_en_gijs/document3/f=/vlgnh9kzlktyt.pdf).
- Nahm, J., & Steinfeld, E. S. (2014). Scale-up Nation: China's Specialization in Innovative Manufacturing. *World Development*, 54, 288-300. <https://doi.org/10.1016/j.worlddev.2013.09.003>
- NEa. (2023). *Emissiecijfers 2021-2022*. <https://www.emissieautoriteit.nl/documenten/publicatie/2022/04/14/emissiecijfers-2021>.
- NJB (2023). Na strafrechtelijk onderzoek nu ook massaclaim tegen Tata Steel. *Nederlands Juristen Blad*. <https://www.njb.nl/nieuws/na-strafrechtelijk-onderzoek-nu-ook-massaclaim-tegen-tata-steel/>
- Noman, A., & Stiglitz, J. E. (2017). *Efficiency, Finance, and Varieties of Industrial Policy: Guiding Resources, Learning, and Technology for Sustained Growth*. Columbia University Press. <https://doi.org/10.7312/noma18050>
- Noordhollands Dagblad (2021). Topstrafpleiter Bénédicte Ficq klaagt Tata Steel aan voor 'moedwillig schaden gezondheid mens en dier'; tientallen aangiften naar het OM. *Noord-Hollands Dagblad*. [https://www.noordhollandsdagblad.nl/cnt/DMF20210204\\_84422948?utm\\_source=nos.nl&utm\\_medium=referral&utm\\_content=/artikel/2367365-tientallen-omwonenden-klagen-tata-steel-aan-voor-het-schaden-van-de-gezondheid.html](https://www.noordhollandsdagblad.nl/cnt/DMF20210204_84422948?utm_source=nos.nl&utm_medium=referral&utm_content=/artikel/2367365-tientallen-omwonenden-klagen-tata-steel-aan-voor-het-schaden-van-de-gezondheid.html)
- NOS (2021). Onderzoeker: Tata Steel terecht geschrappt uit rapport, omwonenden woedend. NOS. <https://nos.nl/artikel/2395212-onderzoeker-tata-steel-terecht-geschrappt-uit-rapport-omwonenden-woedend>
- NOS (2022). Tata Steel-directeur Van den Berg: "We zijn te laat begonnen met schoner produceren". NOS. <https://nos.nl/regio/noord-holland/artikel/222022-tata-steel-directeur-van-den-berg-we-zijn-te-laet-begonnen-met-schoner-produceren>

- NOS (2023a). Hoe de zorgen en het wantrouwen rond Tata Steel door de jaren heen groeiden. NOS. <https://nos.nl/artikel/2491434-hoe-de-zorgen-en-het-wantrouwen-rond-tata-steel-door-de-jaren-heen-groeiden>
- NOS (2023b). RIVM: direct verband tussen uitstoot Tata Steel en kans op ziekte. NOS. <https://nos.nl/artikel/2491421-rivm-direct-verband-tussen-uitstoot-tata-steel-en-kans-op-ziekte>
- NOS (2023c). Overheidsbeleid remt innovatie: 'Gevestigde bedrijven te veel gepamperd'. NOS. <https://nos.nl/artikel/2490422-overheidsbeleid-remt-innovatie-gevestigde-bedrijven-te-veel-gepamperd>
- NOS (2023d). Hoe de zorgen en het wantrouwen rond Tata Steel door de jaren heen groeiden. NOS. <https://nos.nl/artikel/2491434-hoe-de-zorgen-en-het-wantrouwen-rond-tata-steel-door-de-jaren-heen-groeiden>
- NOS (2023e). Vervuilde lucht rondom Tata Steel al in 1975 gemeten, blijkt uit opgediept rapport. NOS. <https://nos.nl/artikel/2491152-vervuilde-lucht-rondom-tata-steel-al-in-1975-gemeten-blijkt-uit-opgediept-rapport>
- NOS (n.d.). About NOS. NOS. <https://over.nos.nl/organisatie/about-nos/#:~:text=As%20the%20largest%20news%20organization,and%20national%20and%20international%20events>
- NRC (2018). Archief NOS.nl van voor 2010 niet meer terug te vinden. NRC. <https://www.nrc.nl/nieuws/2018/01/09/archief-nosnl-van-voor-2010-niet-meer-terug-te-vinden-a1587608>
- Nu.nl (2023a). Tata Steel houdt zich nog altijd niet aan vergeten milieuafspraken uit 1992. NU.nl. <https://www.nu.nl/tatasteel/6290642/tata-steel-houdt-zich-nog-altijd-niet-aan-vergeten-milieuafspraken-uit-1992.html>
- NU.nl (2023b). Provincie stond jarenlang toe dat Tata-fabriek kankerverwekkende stoffen lekte. NU.nl. <https://www.nu.nl/klimaat/6287620/provincie-stond-jarenlang-toe-dat-tata-fabriek-kankerverwekkende-stoffen-lekte.html>
- Oldenbeuving, M. (2020). Meer longkanker 'door roken en luchtverontreiniging' rond Beverwijk, blijkt uit GGD-onderzoek. EenVandaag. <https://eenvandaag.avrotros.nl/item/meer-longkanker-door-roken-en-luchtverontreiniging-rond-beverwijk-blijkt-uit-ggd-onderzoek/>
- OD NZKG (2023a). Kookgasfabrieken Tata Steel onder verscherpt toezicht. OD NZKG. <https://tata.odnzk.nl/kookgasfabrieken-tata-steel-onder-verscherpt-toezicht/>
- OD NZKG (2023b). Dwangsom voor Tata Steel voor onjuist meten stofuitstoot KGF. OD NZKG. <https://tata.odnzk.nl/dwangsom-tata-steel-onjuist-meten-stofuitstoot-kgf/>
- Osborne, D., Jost, J. T., Becker, J. C., Badaan, V., & Sibley, C. G. (2019). Protesting to challenge or defend the system? A system justification perspective on collective action. *European Journal of Social Psychology*, 49(2), 244–269. <https://doi.org/10.1002/ejsp.2522>
- Openbaar Ministerie (2022a). Openbaar Ministerie schouwt terrein Tata Steel IJmuiden B.V. in het kader van het strafrechtelijk onderzoek. Openbaar Ministerie. <https://www.om.nl/actueel/nieuws/2022/11/29/openbaar-ministerie-schouwt-terrein-tata-steel-ijmuiden-b.v.-in-het-kader-van-het-strafrechtelijk-onderzoek>
- Openbaar Ministerie (2022b). OM eist geldboete van 150.000 euro tegen Tata Steel IJmuiden B.V. Openbaar Ministerie. <https://www.om.nl/actueel/nieuws/2022/12/22/om-eist-geldboete->



van-150.000-euro-tegen-tata-steel-ijmuiden-  
b.v#:~:text=Het%20Openbaar%20Ministerie%20(OM)%20eiste,2018%20tot%20en  
%20met%202021

- Page, S. (2006). Path Dependence. *Quarterly Journal of Political Science* 1(1): 87–115.
- Patterson J, de Voogt DL, Sapiains R. (2019). Beyond inputs and outputs: Process-oriented explanation of institutional change in climate adaptation governance. *Env Pol Gov.* 2019; 29: 360–375. <https://doi.org/10.1002/eet.1865>
- Pegels, A., & Lütkenhorst, W. (2014). Is Germany's energy transition a case of successful green industrial policy? Contrasting wind and solar PV. *Energy Policy*, 74, 522-534. <https://doi.org/10.1016/j.enpol.2014.06.031>
- Peters, B.G. (2019a). 'Institutionalisms old and new', chapter 1 (pp. 1-28) in *Institutional theory in political science: the new institutionalism*. Cheltenham, UK: Edward Elgar.
- Peters, B. G. (2019b). *Institutional Theory in Political Science, Fourth Edition: The New Institutionalism* (4th ed.). ISBN: 978-1-78643-792-1.
- Pierson, P. (1996). The Path to European Integration: A Historical Institutional Analysis. *Comparative Political Studies* 29, no. 2 (1996): 123–163.
- Pierson, P. (2000). Increasing Returns, Path Dependence, and the Study of Politics. *The American Political Science Review*, 94(2), 251–267. <https://doi.org/10.2307/2586011>
- Pierson, P. (2004). *Politics in Time: History, Institutions and Social Analysis*. Princeton, NJ: Princeton University Press.
- Popa, M. (2024). Is industrial policy back in fashion? Text-as-data evidence from UK policy documents. *Business and Politics*, 1–23. doi:10.1017/bap.2023.37
- Princen, S. (2007). Agenda-setting in the European Union: a theoretical exploration and agenda for research, *Journal of European Public Policy*, 14:1, 21-38, DOI: 10.1080/13501760601071539
- Radaelli, C. M. (1995). The role of knowledge in the policy process. *Journal of European Public Policy*, 2(2), 159–183.
- Rasmussen A., Carroll B. & Lowery D. (2014). Representatives of the public? Public opinion and interest group activity. *European Journal of Political Research*, 53, 250-268.
- Rijksoverheid (2022). *Amended and restated Expression of Principles*. Rijksoverheid <https://open.overheid.nl/documenten/ronl-21f593b0d4a500042c270471a07fd7b1c701832f/pdf>.
- Rijksoverheid (2023). Bijlage bij beantwoording kamervragen Kooksfabrieken : stand van zaken vergunningen. Rijksoverheid. <https://www.rijksoverheid.nl/documenten/rapporten/2023/03/20/bijlage-2-stand-van-zaken-relevante-bbt-conclusies-en-overige-vergunningen-voor-de-kooks-en-gasfabrieken>
- Rijksoverheid (2023b). Besluit van de Staatssecretaris van Infrastructuur en Waterstaat, van 17 oktober 2023, nr. IENW/BSK-2023/288283, houdende de instelling van de Expertgroep Gezondheid IJmond. [overheid.nl https://zoek.officielebekendmakingen.nl/stcrt-2023-29181.html](https://zoek.officielebekendmakingen.nl/stcrt-2023-29181.html)
- RIVM (2021). Tussentijdse resultaten Gezondheidsonderzoek in de IJmond. Rijksinstituut voor Volksgezondheid en Milieu. <https://www.rivm.nl/publicaties/tussentijdse-resultaten-gezondheidsonderzoek-in-ijmond>

- RIVM (2023a). De bijdrage van Tata Steel Nederland aan de gezondheidsrisico's van omwonenden en de kwaliteit van hun leefomgeving. Rijksinstituut voor Volksgezondheid en Milieu. <https://www.rivm.nl/publicaties/bijdrage-van-tata-steel-nederland-aan-gezondheidsrisicos-van-omwonenden-en-kwaliteit>
- RIVM (2023b). De bijdrage van Tata Steel Nederland aan de gezondheidsrisico's van omwonenden en de kwaliteit van hun leefomgeving. Rijksinstituut voor Volksgezondheid en Milieu. <https://www.rivm.nl/publicaties/bijdrage-van-tata-steel-nederland-aan-gezondheidsrisicos-van-omwonenden-en-kwaliteit>
- RIVM (n.d.). Overzicht rapporten gezondheid in de IJmond. Rijksinstituut voor Volksgezondheid en Milieu. <https://www.rivm.nl/tata-steel/overzicht-rapporten-gezondheid-in-ijmond>
- Rocco, P., & Thurston, C. (2014). From metaphors to measures: observable indicators of gradual institutional change. *Journal of Public Policy*, 34(1), 35–62. doi:10.1017/S0143814X13000369
- Rockström, J. et al. (2009). Planetary boundaries : exploring the safe operating space of humanity, in: *Ecology and Society* 14 (2), Art. 32; online: [www.ecologyandsociety.org/vol14/iss2/art32/](http://www.ecologyandsociety.org/vol14/iss2/art32/)
- Rodrik, D. (2014). Green industrial policy. *Oxford Review of Economic Policy*, Vol. 30/3, pp. 469-491, <https://doi.org/https://doi.org/10.1093/oxrep/gru025>.
- Rothstein, B. (2005). *Social traps and the problem of trust*. Cambridge: Cambridge University Press.
- Schmidt, V. (2008). Discursive institutionalism: The explanatory power of ideas and discourse. *The Annual Review of Political Science*, 11, 303-326.
- Schmidt, V. (2010a). Taking ideas and discourse seriously: Explaining change through discursive institutionalism as the fourth new institutionalism. *European Political Science Review*, 2(1), 1–25.
- Schmidt, V. (2010b). Reconciling Ideas and Institutions through Discursive Institutionalism'. Online edn, Oxford Academic. *Ideas and Politics in Social Science Research*. <https://doi.org/10.1093/acprof:oso/9780199736430.003.0003>
- Schmidt, V. (2011a). Analyzing ideas and tracing discursive interactions in institutional change: From historical institutionalism to discursive institutionalism. *CES Paper Series*, no. 3.
- Schmidt, V. (2011b). Speaking of change: why discourse is key to the dynamics of policy transformation, *Critical Policy Studies*, 5:2, 106-126, DOI: 10.1080/19460171.2011.576520
- Schmidt, V. (2023). Discursive Institutionalism in Public Policy. In *Encyclopedia of Public Policy* (pp. 1-7). [https://doi.org/10.1007/978-3-030-90434-0\\_74-1](https://doi.org/10.1007/978-3-030-90434-0_74-1)
- Scharpf, F. W. (1997). *Games Real Actors Play: Actor-Centered Institutionalism in Policy Research*. Westview Press. [https://www.researchgate.net/publication/233870090\\_Games\\_Real\\_Actors\\_Play\\_Actor-Centered\\_Institutionalism\\_in\\_Policy\\_Research](https://www.researchgate.net/publication/233870090_Games_Real_Actors_Play_Actor-Centered_Institutionalism_in_Policy_Research)
- Schattschneider, E. E. (1960). *The Semisovereign People: A Realist's View of Democracy in America*. New York: Holt Rinehart and Winston.
- Schwarzer, J. (2013). *Industrial Policy for a Green Economy*. International Institute for Sustainable Development. [https://www.iisd.org/sites/default/files/publications/iisd\\_industrial\\_policy\\_for\\_green\\_economy\\_2013.pdf](https://www.iisd.org/sites/default/files/publications/iisd_industrial_policy_for_green_economy_2013.pdf)
- Scott, R. W. (1995). *Institutions and Organizations*, London: Sage.

- Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options. *Political Research Quarterly*, 61(2), 294–308. <http://www.jstor.org/stable/20299733>
- Selznick, P. (1996). Institutionalism “Old” and “New.” *Administrative Science Quarterly*, 41(2), 270–277. <https://doi.org/10.2307/2393719>
- Serra, N., & Stiglitz, J. E. (2008). *The Washington Consensus Reconsidered: Towards a New Global Governance*. New York: Oxford University Press.
- Shrivastava, P., Stafford Smith, M., O’Brien, K., & Zsolnai, L. (2020). Transforming Sustainability Science to Generate Positive Social and Environmental Change Globally. *One Earth*, 2(4), 329-340. <https://doi.org/10.1016/j.oneear.2020.04.010>
- Siderius, T., & Poldner, K. (2021). Reconsidering the Circular Economy Rebound effect: Propositions from a case study of the Dutch Circular Textile Valley. *Journal of Cleaner Production*, 293, 125996. <https://doi.org/10.1016/j.jclepro.2021.125996>
- Skocpol, T. & Pierson, P., (2002). *Historical Institutionalism in Contemporary Political Science*. Harvard University. [https://www.researchgate.net/publication/285758672\\_Historical\\_Institutionalism\\_in\\_Contemporary\\_Political\\_Science](https://www.researchgate.net/publication/285758672_Historical_Institutionalism_in_Contemporary_Political_Science)
- Steinmo, S. & Thelen, K. (1992). Historical institutionalism in comparative politics. In: Steinmo S, Thelen K, Longstreth F (eds) *Historical Institutionalism in Comparative Politics*, Cambridge: Cambridge University Press, pp. 1–32.
- Stern, N. (2008). The economics of climate change. *The American Economic Review*, 98(2), 1–37.
- Stiglitz, J.E., Lin, J.Y., Monga, C. (2013). Introduction: The Rejuvenation of Industrial Policy. In: Stiglitz, J.E., Lin, J.Y. (eds) *The Industrial Policy Revolution I*. International Economic Association Series. Palgrave Macmillan, London. [https://doi.org/10.1057/9781137335173\\_1](https://doi.org/10.1057/9781137335173_1)
- Streimikiene, D. (2015). Environmental indicators for the assessment of quality of life. *Intellectual Economics*, 9(1), 67-79. <https://doi.org/10.1016/j.intele.2015.10.001>
- Tallberg, J. (2003). The Agenda-Shaping Power of the EU Council Presidency. *Journal of European Public Policy*. 10. 1-19. [10.1080/1350176032000046903](https://doi.org/10.1080/1350176032000046903).
- Tallberg, J., Dellmuth, L. M., Agné, H., & Duit, A. (2018). NGO influence in international organizations: Information, access and exchange. *British Journal of Political Science*, 48(1), 213–238.
- Tata Steel (2022a). *Reactie RIVM-rapport*. Tata Steel. <https://www.tatasteelnederland.com/nieuws/reactie-rivm-rapport/>
- Tata Steel (2022b). *Sustainability Report 2022/2023*. Tata Steel. <https://www.tatasteeleurope.com/sites/default/files/Tata%20Steel%20sustainability%20report%20202223.pdf>
- Terzi, A., Sherwood, M., & Singh, A. (2023). European industrial policy for the green and digital revolution. *Science and Public Policy*, 50(5), 842–857. <https://doi.org/10.1093/scipol/scad018>
- Thelen, K. (2002). The explanatory power of historical institutionalism. In R. Mayntz (Ed.), *Akture Mechanismen-Modelle: Zur Theoriefähigkeit mackro-sozialer Analysen* (pp. 91–107). Frankfurt/New York: Campus Verlag.
- Thelen K. (2004). *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States and Japan*. Cambridge, MA: Cambridge University Press.

- Toshkov, D. (2016). *Research Design in Political Science*. London: Palgrave Macmillan.
- Uyarra, E., Zabala-Iturriagoitia, J. M., Flanagan, K., & Magro, E. (2020). Public procurement, innovation and industrial policy: Rationales, roles, capabilities and implementation. *Research Policy*, 49(1), 103844. <https://doi.org/10.1016/j.respol.2019.103844>
- Van Dijck, J., & Alinead, D. (2020). Social Media and Trust in Scientific Expertise: Debating the Covid-19 Pandemic in The Netherlands. *Social Media + Society*, 6(4), 205630512098105. <https://doi.org/10.1177/2056305120981057>
- Van 't Wout, B. (2021). *Brief van de minister van Economische Zaken en Klimaat*. Tweede Kamer der States-Generaal. <https://zoek.officielebekendmakingen.nl/kst-32813-677.pdf>.
- Voinea, C.L., van Kranenburg, H. (2018). Feeling the Squeeze: Nonmarket Institutional Pressures and Firm Nonmarket Strategies. *Manag Int Rev* 58, 705–741. <https://doi.org/10.1007/s11575-018-0355-1>
- Warwick, K. (2013). *Beyond Industrial Policy: Emerging Issues and New Trends*. OECD Science, Technology and Industry Policy Papers.
- Weiss, C. H. (1977). Research for Policy's Sake: The Enlightenment Function of Social Research. *Policy Analysis*, 3(4), 531–545. <http://www.jstor.org/stable/42783234>
- Weiss, C. H. (1986). The circuitry of enlightenment: Diffusion of social science research to policymakers. *Knowledge: Creation, Diffusion and Utilization*, 8(2), 274–281.
- World Health Organization. (2005). *World Health Assembly Resolution on health research*. Geneva. [http://apps.who.int/gb/ebwha/pdf\\_files/WHA58-REC1/english/A58\\_2005\\_REC1-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA58-REC1/english/A58_2005_REC1-en.pdf).
- WRR (2023). *Goede zaken: Naar een grotere maatschappelijke bijdrage van ondernemingen*. De Wetenschappelijke Raad voor het Regeringsbeleid. <https://www.wrr.nl/binaries/wrr/documenten/rapporten/2023/09/14/goede-zaken/R107-Goede-zaken-naar-een-grotere-maatschappelijke-bijdrage-van-ondernemingen.pdf>
- Zara, A., & Delacour, H. (2021). On the Fluidity of Institutional Change: Complex Interrelations Between Multiple Types of Institutional Work During the Serbian Transition. *Journal of Management Inquiry*, 30(4), 421-437. <https://doi-org.ezproxy.leidenuniv.nl/10.1177/1056492620949688>
- Zegveld, W. (1977). *Industrialization Policy, Industry Policy and Innovation Policy in the Netherlands*. In: Stroetmann, K.A. (eds) *Innovation, Economic Change and Technology Policies. Interdisciplinary Systems Research / Interdisziplinäre Systemforschung*. Birkhäuser, Basel. [https://doi.org/10.1007/978-3-0348-5867-0\\_18](https://doi.org/10.1007/978-3-0348-5867-0_18)

# Appendix

## 1. Interview list

**Interview 1:** Sacha Voet. Employee at Frisse Wind, mobilises local residents in support of the mass claim against Tata Steel Nederland, by phone in the Netherlands. 31.1.2024

**Interview 2:** Pedro Nooijen. Activist at Extinction Rebellion, by phone in the Netherlands. 6.2.2024

**Interview 3:** Antoinette Verbrugge. Initiator and director of GezondheidOp1, civil lobbyist, professional advocate for a cleaner and healthier world, contribute to legal proceedings and complaints against Tata Steel Nederland, local resident, by phone in the Netherlands. 8.2.2024

**Interview 4:** research expert on industrial policy and green transitions, in person in the Netherlands. 21.2.2024

## **2. Transcribed interviews**

### **2.1 Interview 1: Sacha Voet**

#### **What has been your motivation to bring about change on issues related to TSN?**

You enter that village, and it stinks. There is noise. There is a lot of hindrance. And, there is just a lot of fear involved. Especially when you speak to parents on the school playground who are sick. Then you start thinking, is there a connection? So, our foundation actually started with a group of parents and a group of families who wanted to lobby for more research and policy because they wondered if what they saw happening in Wijk aan Zee and the region was real. So, that's how it started. And meanwhile, it has evolved into legal cases, civil cases, cameras etc.

#### **What specific actions have you taken?**

The biggest first thing was the criminal case. It's still ongoing, and the Public Prosecutor's Office is investigating. We're not sure when the result will come. We thought it should have come at the end of last year, but I think it's a good sign that they're taking a long time with the investigation. Then we started placing cameras. We have three cameras around Tata Steel. Cooking Plant 1, Cooking Plant 2, and the Blast Furnace. And with that, we basically started doing the work of the environmental service North Sea Canal area. So, we monitor what we see because the people who live there, we saw them all smelling and fumes coming from Tata. And then the environmental service, a kind of protective body, would say, okay, do you have a photo, do you have evidence? Because you can report it, but a photo is not good enough. You can't prove when it happened. So, that's how we started. We thought, okay, how do we prove that? How do we report it effectively? So, we placed some surveillance cameras, and we are now working on the civil case, the mass damage claim.

#### **How do you try to influence policymakers responsible for Tata Steel?**

Really in every possible way. Basically, everything you see in the news is through a group of residents. You have Frisse Wind, Gezondheid op 1, the village council. And then a campaigner from Greenpeace, Stichting Schapen Duinen, and Sandra Demmers. It's essentially a handful of residents who are lobbying in every possible way in politics. And I can confidently say that everything you see has been done by one of us. We're involved in complaints. We are very much involved in the RIVM groups. We are working with the OVV, which is the Safety Authority and the ministry. We are involved everywhere. But we had to fight very hard for that, really fight very hard. If we can enter somewhere, we are there. And now, resident organisations are invited to almost everything. Except for Tata events, we're not so welcome there.

#### **Can you name specific actions you've taken that have led to change?**

Initiating a criminal case. Being able to mobilise all those 1500 people to file that charge was really significant. The cameras, I personally find them truly historic. It's insane that we have to do the work for a government agency. And since then, for example, the Environmental Service itself has also placed cameras, and we see that Tata had to report incidents themselves, and they didn't. And now that they

know there is evidence, you really see that they are, making 300% more reports. And you can also see that it's playing a big role in the area. People are really happy that they can finally show what's happening.

**Do you think any of these initiatives has been the most successful?**

I think all these small things together contribute a lot to more mobilisation. *'Successful'* is difficult because what is very successful for us may not have any outcome at all. We don't know what the Public Prosecutor's Office will say, for example, that Tata is reporting more. Because are they really greening because we have cameras? No, not yet. And now we're very focused on mobilising for the mass claim. That's going very well. So, it's playing more and more in the region.

**So, you're saying it's a combination of all these different factors?**

Yes, people just keep pushing. And now we also have Greenpeace, who does more of those actions like 'Stoppen met kolen' ('End Fossil Fuels'). It also leads to more polarisation, but also, it is more salient in activist communities.

**How do you polarisation and tension in the region?**

In this case, it's difficult because it's a very complex region. There is so much employment there because of Tata. So most people have been living in that region for generations because their family members work there. So, very few people dare to speak out against Tata Steel. That's why mobilising is so difficult. But because there is already polarisation in the region due to employment, a factor like Greenpeace can be the straw that breaks the camel's back. Just people getting so angry. For example, Sanne, my board colleague who started Frisse Wind, there's no one active in the region anymore. But she called me last week and said, "I blocked the road with coal again, and now I can't even take my kids to soccer, you know?" That's difficult because we're both very activist. But where do you draw the line? Because stopping coal, those are usually people who don't live in the region. And they understand; they want to block the road because Tata is holding a chess tournament, but if you live there, you know that the road to Wijk aan Zee is literally the only road. So then people might turn against you in a very negative way, I think. Which then puts our foundation in a more negative light. So, with polarisation, it's like, in many other social movements, it's good. Here it can lead to really explosive things. People can get so angry.

**In what ways do you notice that people are afraid to speak up?**

In every possible way. I'm in charge of mobilising for the mass claim. We now have 2500 registrations, which is really a lot. But I call everyone who registers, and I can hardly find anyone willing to speak in the media. My goal was, I want, I want. We often get media requests, and Sanne, Jaap, I, John. We've all spoken in the media multiple times. Everyone knows us. But we want new faces. How hard can it be to find someone willing to speak about why they're registering for the mass claim? And that doesn't mean you want Tata to close. We don't want that at all. Just explain why you're registering. What kind of damage have you suffered? How black is your wall? You would think these are basic things. But even if people have registered, they don't dare to speak out. They dare to explain to me why. But they say "I

don't want to explain it in public". It's really peculiar. People are really afraid of opinions and reasons. And that's usually because your uncle works there or your friend works there or your neighbour.

**Do you notice if people working at Tata feel differently about it?**

We now have quite a few registrations from people working there. And they just have to stay secret. They never want it to be known that they've registered. Yeah, that's really terrible. They just don't want it to leak. For example, when the RIVM report was published we already knew what was in it because we were in those advisory groups. But when it was published on a Friday, then on Monday, the RIVM and the ministry held a resident evening. Which was actually an evening where concerned residents could ask questions because two month earlier they read in the newspaper that they could die 2.5 months earlier. But this evening was completely hijacked by Tata employees. They just spoke up at every question a normal citizen asked. So, they're really pushing the boundaries. But I think it's also because you have to realise that Tata is really a very good employer. So, it has really bought houses for people in the past. It's a really good employer. If you weren't highly educated, you could still grow at Tata and give your family a good life. And that's deeply ingrained in the culture there. I've also called people, like a lady who registered for the mass claim recently. And she really believed that her husband had died of asbestos cancer he contracted at Tata. Well, that seems logical if he had been working there for fifty years. Now, that connection can never be proven. But yeah, we can all think it. Then she said at the end, "Yeah, but Tata is really a good employer, you know? Yeah, a really good employer." Then I think, okay, you're registering because your husband died, and you want to file a claim. Yeah. But you can't say that Tata is somehow bad? No, not that. It's really strange. I really had to immerse myself in the culture before I understood that. But also when I call people and then, no, yeah, of course, I'm registering because I live here in the stench. And I have anxiety because of that, etc. But you know what I got this week, she said? Yeah, a Christmas package." Well, that was nice. Your husband died, and you still get a Christmas package for your deceased husband. So, that makes everything okay again. It's really ingrained in their DNA. And that also really comes from Tata. Tata has handled it so cleverly. Everything that happens in the village is from Tata. With the chess tournament, that's every year, then the whole village is like a festival ground. The soapbox race, considered the nicest evening in Wijk aan Zee every year. Everyone builds a soapbox, like a wooden cart, and you go down the dunes racing. This is sponsored by Tata, everything there is Tata-related. When I call people who have registered, I ask, do you maybe want to speak out in the media or let your name be known? They say "that's not possible because, for example, I'm the head of the scouting association. And the scouting ground is sponsored by Tata". Tata is really ingrained in their DNA, and that says a lot about the power of Tata in that area.

**Have you noticed any changes in the system since your efforts as a foundation began?**

There is now an expert group established at the Ministry of IMW. That is a group of twenty experts who will conduct research for two years on the implications of the RIVM report and how to translate that into policy. So, you appoint an expert group for two years while you're still working on the tailor-made agreements as a ministry. So, it's basically a tactic of the IMW to just postpone everything again. Because now the IMW blames everything on it. The expert group is still investigating. And in two years, the



expert group will say, “we're not done yet”. It will take three years. And then we're already in 2027. Well, then we're almost at the deadline of 2030... when they might eventually close the coke ovens. They all think there's so much change. It's really so bad. Really, I don't have a clue. Very professional. So, yes, things are changing. Look, I find it great that it's playing so much that such an expert group exists, but I think we all become very pessimistic when it comes to policy... so I see it as a kind of delay tactic.

### **What are you trying to do?**

We are also lobbying for that a lot. But it mainly goes with the ministry. And it's very difficult with the environmental service, which is peculiar because they're a protective body. For instance, we always submit the enforcement requests, but after a lot of hassle, they don't even respond. Together with Greenpeace, we have now taken legal measures to sue the environmental service.

### **What have you heard about the delay?**

I heard that someone let slip in a meeting that... While, we're sure that the tailor-made agreements are a thing, That just has to be. There's just a pot of money that needs to be divided. But someone accidentally let slip in a meeting: “the tailor-made agreements let's just wait and see if those come”. Well, that plays out again among all our residents in the region... if we can't even trust that... Where then...?

### **What is behind the lobbying groups?**

I was in a meeting recently, and then Vivian Heijnen just looked at the CEO of Tata. It was about hard deadlines for coke 2. Then someone from the residents' group said, okay, you said 2030, but that's not in writing anywhere. Can you, as the state secretary, say 2030 now? Then she said, yes, no, yes... Then she looked at Hans van den Berg, CEO of Tata Steel. No, we're still in talks about this, right? For a group of really 200 angry people, you dare to look the CEO of Tata Steel in the eye and say, right? Well, we're just making jokes about it now, but that just shows how extreme the power relationship is. Because if the state secretary dares to ask questions to the CEO of Tata Steel, then we show who is at number 1, place 1 and place 2, right?

### **How do you fight against such a large group like Tata Steel?**

It just can't be done as residents' groups. And that's why we're incredibly proud of the mass claim. That's just the only way you can really exert pressure. You know? We've tried to exert pressure in every other way, but you just don't get anywhere. So then, you know, it has never been our first instinct to play with money. But that's the only way we can really scare them.

### **Do you think there are still significant changes needed?**

Actually, not much has happened. I think there can be much more lobbying, well, we're trying, but much more can be done in terms of research. The RIVM study is a step, but actually, if you dive into these 230 pages, there are still a lot of gaps. So that just has to be done as quickly as possible. There really need to be hard studies, hard figures. We still don't know what comes out of those pipes. It has never been investigated what kind of stops actually come out of those pipes. Yes, just things like that, it's getting

absurd. There has never been a study on water quality, groundwater quality, how it is there to swim, to surf. So there is, through Surfrider Foundation, they have actually conducted a study among their surfers in Wijk aan Zee, they have done a study on physical complaints. And they have also analysed water samples themselves. Well, really shocking things came out of that, it hasn't been picked up by the ministry, for example. It's just a bit shoved under a rug like, okay, well, sometime. If more hard figures can come out, then we have more ground to stand on. And further, greening, but we all lose a bit of hope in that in the meantime. If those tailor-made agreements, if that money from the ministry doesn't come now. Sometimes you really think okay, what will the end do? Because the ministry keeps postponing, the hard figures are not coming, so we are now trying to exert some kind of civil pressure to make all that come. But yes, greening is always the best answer. But we are losing confidence. Actually, we don't want hard deadlines. We want to know when that will happen and in what way. And the method should not be hydrogen.

### **What would be your optimal result?**

I think it's also good to realise that no resident would ever say that Tata should close. That is really not our end goal. We want a quick closure of the coking plant. And not just coke plant 2, which you often read, but also coke plant 1. With a quick closure, we're actually talking about 2025, but that's getting very close in the meantime...

## **2.2. Interview 2: Pedro van Nooijen**

### **Specifically looking at Tata Steel, what motivates you to work for change in the issues surrounding Tata Steel?**

Tata is truly one of the largest polluters in the Netherlands, both in terms of nitrogen and CO<sub>2</sub>. It even ranks in the top 5 most polluting factories in Europe. Out of 150 steel factories in Europe, Tata is in the top 5. It's the only one in the world situated so close to inhabited areas. People often refer to China and India, saying it's worse there, but ultimately, it's Tata Steel. It's the only one in the world so close to populated areas. That argument doesn't apply, as it's often said for China or India. So, in terms of global impact on nitrogen and CO<sub>2</sub> and locally, it's also carcinogenic. It's proven that there is more cancer in the vicinity.

What also struck me as cynical is that they promoted or organised the Tata Steel Chess tournament, symbolising international sportsmanship. The smartest people from around the world come to play chess while their emissions, a portion of their emissions, alter the brain development of young children, leading to lower IQ in the area due to lead emissions. I find that quite cynical: making a show with an international chess tournament while their emissions affect the IQ of the children in the vicinity. So, the impact is enormous, and that's why I fight against it.

What also angers me is how they handle it, playing dirty games to push things through. You might know that Benedicte Ficq, a lawyer, wants to initiate a criminal case. For instance, in the Netherlands, if something happens within a company, an incident, you're supposed to report it. Tata Steel has never reported anything. They apparently didn't have cameras at hand. When residents installed cameras and

announced they would immediately send the footage to the Public Prosecution Service, Tata Steel suddenly started reporting incidents in the same week, which they are obligated to do. I've heard they reported up to 2000 incidents per year, several per day. But this started only when they knew residents had cameras. They started covering up, even tampering with emission measurement data from the chimney. Data came out that simply couldn't be accurate. People say, "This doesn't add up; something must have happened." Or what I recently heard is that we have an environmental service that must enforce on behalf of the province. They sent two inspectors, and they weren't allowed on the premises. Tata couldn't guarantee their safety. I don't know if it was due to angry employees or safety of substances. But stopping inspectors who are supposed to enforce on behalf of the government, and they somehow get away with it, or at least buy more time. Just all these things. Even the government wanted to install cameras, and they are taking them to court for it, citing the privacy of the employees. While all you see is a person 300 meters away, wearing a helmet, just working. Claiming that the privacy of employees is at stake is a joke. All these things, the way companies in the group deal with it, not taking it seriously, making a show, praising a green steel plan, organising a chess tournament, and sports events for children. That's cynical. And yes, you're talking about the health of people in the immediate vicinity, and about carcinogens, nitrogen, and CO2 emissions. You're talking about significant things.

### **What is Extinction Rebellion's goal regarding Tata Steel?**

Extinction Rebellion has a specific campaign – "Stop the Coal." It's not a separate action group, but it's essentially a campaign of Extinction Rebellion. And we say that CO2 emissions, nitrogen emissions, are disastrous, and that the government isn't doing anything about it. At least, they aren't doing nearly enough about it. They don't enforce it, they don't apply the laws and regulations that we do have. So, as Extinction Rebellion, we push them to act. And we have demands, for example, when it comes to Tata Steel. If Tata Steel doesn't meet the standards, we say, "Okay, enforce the law. Just apply it." That's what we say about Tata Steel because the standards are there. They have been tightened up, but they still aren't enforced. So, we're talking about enforcing the laws and regulations that already exist, in this case.

### **Can you tell me more about the specific actions or activities that Extinction Rebellion has undertaken regarding Tata Steel?**

In the two years that I have been active, I've noticed that the activities became increasingly targeted. In the beginning, it was quite broad but it wasn't always clear who the target was or what the goal was. That has changed, and it has become much more targeted. So, for example, I already mentioned the health issues, the carcinogenic emissions, and we've set up actions that targeted those issues. We've set up actions targeting nitrogen emissions, which is quite a hot topic in the Netherlands now. And we've set up actions that specifically targeted CO2 emissions. Then, with Tata Steel, we've set up actions that were quite targeted. For example, in the beginning, there was a blockade at the entrance. That was somewhat of a symbolic blockade because the actual entrance is much further down, but we managed to blockade that entrance for 3 days. It's quite a large terrain, but we managed to do that, and that was very intense. And then we had another action, where we also closed the entrance to a certain extent. We couldn't fully block it because it was too risky, but it was closed for a while. Then we carried out a gas mask action, a

few months ago, where we handed out gas masks to employees because, like you said, Tata Steel claims that substances are not carcinogenic, and yet we say they are. Well, what we did then is hand out gas masks, and it was a very well-received action. Many employees were thankful, actually. It was a positive action, where they said, "Finally, someone cares about our health, about our well-being." And we've had other actions, and one very recently. The idea is that, despite the heavy consequences, the negative consequences of Tata Steel's emissions, we offered TSN a prize for being the largest nitrogen polluter in the Netherlands. We awarded Tata Steel a golden star, saying, "Congratulations, you are the largest nitrogen polluter in the Netherlands." We did this in quite a light-hearted way, but with a very serious message.

**How has the response been from Tata Steel or the government regarding these actions?**

Tata Steel barely responds. They do a lot in terms of communication, with their employees, with the public, and with the government. But if you look at the core of the matter, they don't respond much. They make a green show with their green steel plan. They take part in the Climate Agreement and the talks, and they organise a chess tournament. But if you look at the core, at the emissions, the substances, the emissions, they don't respond much. They just continue. They might say they'll make an effort or do this or that, but they don't really respond to the core of the matter. So, that's Tata Steel. And the government, well, the government is trying to do something. They are taking small steps. But in the case of Tata Steel, they aren't strict or decisive enough. For example, they want to install cameras, which is great. But Tata Steel is taking them to court over this. The government is trying to do something, but they are being obstructed. And you also have the Province of North Holland, which is the province where Tata Steel is located. They have announced stricter measures, but they haven't been implemented yet. So, you could say that the government, at the moment, is taking small steps, but Tata Steel isn't responding. The government is trying to do something, but they are being obstructed. So, that's tricky.

**How do you see the role of civil disobedience in bringing about change, especially in the context of environmental activism?**

I think it's crucial. We, Extinction Rebellion, use civil disobedience, which means that we, consciously and deliberately, break the law. We break the law because, in our opinion, the government isn't doing enough. They aren't taking the necessary measures, they aren't enforcing the laws, they aren't applying the regulations that they do have. So, it's a conscious choice to break the law to bring attention to the urgency and the severity of the situation. And I think it's necessary because, without it, there wouldn't be any action. There wouldn't be any sense of urgency or attention to the matter. So, I think it's crucial to bring attention to it. And the law-breaking is not arbitrary; it's a conscious choice. We don't do it for fun; we do it to bring attention to the severity of the matter.

It seems like civil disobedience plays a role in bringing attention to issues that might be overlooked or not given enough priority. And it brings a sense of urgency. For example, you have laws and regulations, but if they aren't enforced, or if they aren't applied, or if they aren't effective enough, then you need to do

something to bring attention to it, to say, "Hey, this isn't right. It needs to change, and it needs to change now." And that's what we do with civil disobedience.

### **2.3. Interview 3: Antoinette Verburgge**

#### **Could you briefly describe what you do in relation to Tata Steel?**

It's actually too much to list. I can already say that more than half of what I do cannot and should not be disclosed because these are projects that absolutely cannot be made public. They are only revealed gradually and as a surprise.

I come from Zeeuws-Vlaanderen, and that's where I was born. I was born near the beautiful Westerschelde, surrounded by a lot of industry. Even as a child and teenager, I had concerns and often wondered about the impact of what was coming out of those pipes. Dow, which was then Dow Chemical (the name has changed since then because "chemical" didn't sound friendly), was there. I loved nature and often wondered about the water, the vegetables, and the animals in the area. Unfortunately, there was a fire in the coke factory in Sluiskeel at some point.

In 1983, the coke factory in my hometown closed due to health concerns for the employees and the environment. However, here, both factories are still open and will likely remain open for a long time, depending on government decisions. Tata Steel, my neighbour, consumes a massive amount of water every year, much of it being discharged back into the environment after being polluted. This situation deeply concerns me, especially regarding water usage and pollution.

When I moved here about six years ago, I had a naive perspective. I longed for the sun, missed the sea and the dunes, having grown up near the Westerschelde. This area seemed like a unique and mixed village with many artists, not as polished or smooth. However, my parents earn their living by transporting goods, including from Dow and other factories that I had mixed feelings about.

I decided to stay, even though I was aware of the environmental issues. The first evening, I noticed a terrible smell in the air, and the next day, I discovered the presence of two coke factories. I considered selling immediately, but instead, I chose to fight against the pollution. I founded the 'Gezondheid op Eén' foundation to focus on health-related issues. I believe that health, both interpersonal and physical, is crucial, and I advocate for considering health in all aspects of life.

I became aware of the connection between health and the environment, leading me to take a stand against Tata Steel and similar companies. Despite initial resistance, more people are joining the cause, and I believe that change is possible. The fight against Tata Steel is not just about them; it sets a precedent for other companies to be held accountable for their impact on health and the environment.

#### **Does this open the door for other companies?**

You see that with Chemoers as well. But you also see it in various areas. I heard it from an economist who is often invited to those big companies. And he said "This has so much impact. Those big guys. They are really very worried now because they know that if they don't do more about health and the environment, then they are also in trouble. But you see them everywhere. More and more reports. More

and more people standing up. You see Extinction. I think it's also great that you brought them into the conversation. You also see that at Greenpeace, initially they said no, you can't come to us. We are completely focused on the climate. Then, at some point, they said now we actually understand the relationship between climate and health. We shouldn't only focus on the climate but health has a direct relationship. If we don't also hold the polluters accountable for health damage. Yes. Then we are actually dropping the ball. Both towards you (as the next generation) because we need to stand behind and beside you. But also in our strategy and in our action plan. So I found all of that really, well, actually quite monumental things. So I'm not completely pessimistic. Definitely not. Absolutely not. That really changes something. That really changes.

**Was there a lot of resistance in your environment?**

There is also a lot of support and reinforcement. I meet the most amazing people, exceptions aside. And with some, it's difficult to collaborate. But with 80%, it's just very nice and inspiring. And I don't get much... I heard that in the beginning. And sometimes I still hear it from my own people. Well, trailblazers are needed. It just happens to be me. It could have been someone else.

**In what ways do you try to influence policymakers responsible for Tata Steel to initiate change?**

I send them information. I often message them. I almost always ask when I meet someone and think, oh, that could be a useful contact. But I also have a lot so then I have information and then make sure that I look what the data lobby that is also just their work what they all do. You can find that everywhere, you see it on their site, I know by now how they work so then then you always make sure that you forward the information they don't have. There are many examples, could be files, articles, interviews, but I, together with a camera team that is also in my foundation, and ultimately Urgenda and Greenpeace contributed because they themselves don't have enough money, you know they always have problems with money because you know that Tata has a lot of money and the government too, so that's a kind of situation where we are again asking for support, so I find that really annoying, that hard work and you see that others get paid a lot for it and we always have to scrape by, but well, then we managed to get a renowned agency that does talent research made a labor market exploration and that agency also works for Tata Steel but also for the government and the agreement was always look in the agreement was always if we ask you for that research, that labor market exploration, then the result must be the same as for Tata Steel, your client, or for the provincial government or for whichever ministry, because that was the deal. the idea was to debunk one of the myths so if you say how do you work then that is a leitmotif debunk the myths that are always underneath are always the same myths eh so also employment well if Tata Steel collapses then everyone here is jobless and everything the whole region goes down the drain and and impoverishes and pollutes well I can tell you it's not true that research has been very thorough from the moment you start working there from your 17th you also get paid very well that's one thing they pay very well so that's enormously binding but from your 17th until pension age until the age whatever level whatever age I am 44 and I work at the coke factory then there are for me there are six or seven others at a comparable level. A bit cleaner, at a comparable level. The point is that the salary is often less.

So, if, let's say, Tata Steel collapses, that's not what I want, but let's say, then you could immediately come up with a plan to compensate the people. But there is more than enough work for everyone. There are a lot of job vacancies. So that's one of those weapons, a non-violent weapon: debunking the myths.

### **What is your goal regarding Tata Steel?**

My goal is to prioritise health. And as soon as possible, that is also stated in the health ultimatum, I think I already messaged you about it. There is an alternative plan in it. But that they reduce, that they start producing clean. And that we have all worked out with experts. It's possible. And it can be done in the foreseeable future. If that doesn't happen, then it must close. They have had so many chances and wasted so many opportunities. Then it's really a matter of too little, too late. And when is the deadline for that according to you? Yeah, of course, that is also stated in it. The deadline is for coke factory 2 to close by 2025 at the latest. Okay, that's approaching quickly. Yeah, but it's possible. And the coke factory and the Pelletfabriek by 2030 at the latest. And reduce production. We are moving towards a completely different world. It's not for nothing that so many people and organisations and how we are also involved in bio-based construction. Others will use different building materials, different raw materials, etc., etc. and hemp and flax, and a lot is already being done with them, so it's not for nothing that these developments get much less attention and money than still those fossil fuels, boys, and girls, but it can be done for a long time, and we are allowed to produce up to 7 tons of steel here, that is a permit and it can easily be done with 4, easily, and that means that you close the dirty side.

### **How do you view the plans for green steel or other alternatives?**

I no longer call it green steel. It's a blue steel plan because green would imply that it's sustainable; it's on natural gas for a long time because there is a plan with a hydrogen plug, but that's a complete question, so it's a blue steel plan and with a lot of risks. That was explained again yesterday by the expert team. For now, it's getting worse, that's what the politicians and those who really know something about it say, not all politicians, but there are a few politicians who have earned it, the renovation begins, so they have already started at their own risk while no decision has yet been made because that tailor-made arrangement, you know, is still diffuse, the rapporteur is still not informed, the report from Frans and Hans Weijers is also not out yet, but they have already started, but the plan is that they are already building it, and in the meantime, the old junk just keeps running and you have the enormous impact of the renovation, which is very large and also remains for a long time, the old one systematically starts the new one, then it remains for a long time, that's all allowed, so you have a lot of extra misery for one thing to name, it's also a business case that is still not covered, it is also said, of course, that it is and that will also be something about it soon in the press, that it is a dead-end construction, and that Tata Steel actually wants to raise as much money as possible to smoke out that old junk because they earn a lot from that coach, they earn a lot, but that they actually just use up their factory and for the same money, they are gone, nobody knows, they still have not come up with figures on emissions that will come, only with forecasts but not at all with exact numbers, so it's very vague, and nobody knows yet what we're in for, and it doesn't sound good. I also heard recently again one of the aldermen at a congress where I was from the North Sea Canal Area project bureau and there are all companies, there the health was not mentioned,

then I stood up at some point, did that, I got a very angry alderman who totally scolded me in the bathroom that I dared to do that and that I had hijacked the stage, I was very polite, I just said that it surprised me that there were all companies and such presentations where Tata was portrayed as the green saviour because thanks to Tata Steel, we would have very green energy and then and then there were still a few problems to overcome, that was mentioned, because everyone knew that Tata Steel had a bit of trouble, but that would all be fine, health was not mentioned at that congress, it also turned out again now I know what I wanted to say, there was the alderman who said one of the aldermen of the IJmond municipality I would like that everyone and also the residents saw the same dream as I see in 2050 everything here is clean and green in 2050 what will happen it is now 2024 how many deaths still have to occur because that's just the way it is it's about deaths that fall and then it's also said you surely know the term collateral damage yes, I know that one.

### **Have you noticed any changes in the system since your efforts?**

That if you keep applying pressure, you find openings and that also the politics and the system can no longer ignore us, which doesn't mean that everything is already solved, but it is a very strong and firm start. So no system can get away with it anymore, and a change is, of course, that's what you were already talking about, that there are more and more lawsuits, that's really a change and it doesn't seem like a good change, and it is, of course, a change driven by the fact that we as citizens are against the wall, but it is also positive change at the same time, we need those lawsuits to crack the system and to ensure that that change in consciousness continues,. That's why I'm not just out to start lawsuits, but I am building towards a new lawsuit that falls under investigation, that also gets other parties involved who still dare to publicly say health should be number 1, think of a lung fund and a KWF. You see that more in their expressions now, but those are still all organisations that don't dare to show their true colours yet.

### **Why would that be?**

When I talk to them about it, they say "it's not within our scope. Yes, you can do something about that scope, but we're not called into existence for that purpose, and we're not called into existence to name specific companies. That's what politicians should do, but it would be really nice." We're not dependent on them, but I do think there will come a time when more of those organisations will speak out even more.

### **How do you notice that they cannot pass you?**

Because we get in everywhere. I haven't tried to enter the Second Chamber in how many years, but now we just walk in, and we get a seat at the table. I also notice it in the invitations you receive with the foundation, and I notice it in the press. Everyone knows you when you advocate and everyone knows what it's about. So, very few doors remain closed. People and organisations can hardly refuse you anymore. We also have many connections in the press, which helps a lot. It often happens that I can call a journalist, keep them well informed about what's happening, or if I think something is coming up. When I call a journalist and say, "I think I have a story, let's discuss it," seven out of ten times, something significant comes out of it. And not just to discuss; I always say I'm not here to come 30 times to discuss



the same thing. We genuinely aim for change and not just to go along with it, because endless compromise doesn't work. But you must first get to that table. Sometimes it's wise not to sit at certain tables because the conditions there don't align with my mission. You might say, "Thank you for the invitation, but I'll come when you make a real effort, and I'll join next time." You always have to carefully consider what to accept and what not to. You know that it will be endlessly used against you, like how often I'm mentioned by Jeroen Otto. When people say, "I heard Jeroen say on any channel or in any newspaper," I talk to the residents very often. They ask Jeroen, "What have you done? Have you already brought about a change?" We are often manipulated, so you have to be very careful, especially in participation rounds. It's challenging because these rounds are often very opaque. Participation should be transparent, but it often isn't, still.

### **Do you think there will be significant changes in the coming years?**

Yes, definitely. I think more and more people are standing up; people just can't take it anymore. I spoke with a scientist before the debate, and he said he would speak out because he can't tolerate what's happening with the steel slags and how there's incredible lobbying to label them as circular building materials, allowing them to be used anywhere. People are fed up, and there will be more whistleblowers, who should also be better protected. You can see it with Extinction Rebellion, too; resistance is growing, and sometimes people become more threatening or use intense language. Even some farmers, not all, but some go to extremes in their actions, threatening actions. I think it's part of a certain trend that you sometimes have to go through the mud deeper before reaching the light, so to speak, before you can really start something new. On the one hand, there's a new movement or stream, but sometimes you have to go through a lot of muck or endure a lot of unpleasantness for that new stream to grow and flourish.

### **What streams are those?**

I see the farmers, at least the one's setting fire to farms and taking their big tractors to the streets. As you know, non-violent protesters get arrested, and these can be very intense streams side by side. Some talk about increasing right-wing sentiments, while I believe that, especially in these societal matters, you shouldn't talk about left or right because your health comes first. I think we should focus on that because, regardless of your political stance, your health and that of your loved ones are crucial. There's a wave of breaking down barriers, seeking common ground, but every change triggers resistance; that's very human. If I have to stop something or let go of something because it no longer works, I'll continue for quite a while because I'm attached to it. Besides, the unknown always brings fear. I mentioned to you that I saw myself on that diving board and thought, "I have to jump, and I know why I'm doing it, but it's scary. It's unknown." This is also true for the workers in that factory and in other factories. They say, "Our steel, our pride." I understand that, the pride and the resistance because what's next, and who are you then? Each of us is crucial, but your identity is also heavily tied to your work, to what you do. These are interesting processes that should be acknowledged more, guided more, or at least discussed more. I'm already working on a team, which I call the Stockholm Syndrome team. We are stuck in the Stockholm Syndrome with certain groups. This example is illustrative, and I think it's essential to delve into it

together. Not everyone may appreciate it, but it helps reveal our old way of thinking and encourages us to be more open to change.

**Do you notice a lot of friction among the employees living and working in Wijk aan Zee at Tata Steel?**

That is indeed the case, but there has been a study. I believe there are 48 or 52 people working at Tata Steel in Wijk aan Zee, and there are around 2500 residents. In Muiden, there is also some resistance, but it's not as pronounced. Many people come from outside the region; if you stand at the gates, you see buses arriving from much farther away. Of course, there are also many migrant workers doing the dirty work.

Certainly, there is friction, but among many people. I know someone who works there, and several others have spoken up. However, they have been silenced and ignored. One of them will leave soon because they can't endure it. It wasn't intended for him to express how bad he felt; it wasn't intended for him to voice his concerns and talk about how he tried to raise issues where he thought, "Hey, these measurements aren't accurate," or "How can this be?". Companies, like Tata, not only control their environment but also make people sign nondisclosure agreements or offer them money.

**Do you think other factors besides your own actions have helped bring about change, and if so, what were they?**

As I mentioned before, parties like the Party for the Animals play a role, and there are a few politicians. They stand alongside you, and without them, it would be much more challenging. The pioneering role of certain individuals and organisations, such as Urgenda, which doesn't boast openly but does incredible things and supports affected residents. The topic is alive; people often say "we still eat as much or more meat, and we haven't really changed, and we still fly a lot." Partly true, but you also see more people becoming aware that we live on a planet where we are causing deforestation and not taking care of ourselves and other living beings.

Also, artists who speak up, I find that very striking. I also work closely with them and plan to do more. For instance, Anouk Nuyens and Rebecca de Wit from the Shell case, who are also involved with the Tata case. We have a lot of contact; they have been on stage in theaters in Rotterdam and Amsterdam, which had a significant impact. Policymakers were present, and they were invited, with a diverse audience. More comedians are speaking out, such as Vincent Bijlo, Dolf Jansen, and Tinkerbelle. There's also Servies, which makes dishes from emissions; they harvest dust in Rotterdam. These are crucial indicators. Artists are our compass, just like birds. If you don't hear birds singing anymore, it's a sign. Birds are our compass; when the noise increases, they sing louder to rise above it. There are various people expressing themselves through art and poetry, like Marjolijn van Heemstra. They write about it and don't stay silent. That's fantastic. Myrthe Hilken, a former Member of Parliament who worked on the child amnesty, is also involved with Tata Steel. You can see the significant impact Carice van Houten, an artist, has as well. That's very remarkable.

## **2.4. Interview 4: research expert on industrial policy and green transitions**

### **In your opinion, how does green industrial policy influence the Dutch manufacturing sector?**

There's two kind of more visions on this in the Netherlands. The first one would be that the manufacturing sector wants to transition, wants to be greener, but needs more security to make a step. And you see that this kind of frame, you could call it, is mostly used by some of these companies themselves, if you look in their public statements, but also if you look at the debates in the European Union, in the parliament, that there are, mostly the center right, not the far right, that use this frame. They want to, and they could, but they just need a little bit of a push and security.

I think the other frame is the opposite, or not everything, but it's that these companies don't care actually about greening, but if they don't have to pay it themselves, then sure, why not? We'll get the subsidies and we'll get a bit of an advantage, also globally. We can be more innovative and we can make sure that we have some kind of advantage compared to other companies.

### **And what role do you think the government plays in this? So any policy that's created by the government to influence the manufacturing sector?**

There's two types of things could happen here. You could say: we just make rules for everyone, like the whole manufacturing sector. We just either, have a subsidy that everyone can apply for, or we can have more regulations. That's a choice they made in the past and they still have. We have these green energy subsidies and the carbon tax.

On the other hand, you could also say we have this tailor-made policy. And the idea applies that some companies want to, but they don't know if they're going to make it if they set these steps themselves. So we help them a little bit. Which is very tailor-made. So you can't help everyone, or at least I think you could, but then you would need a lot of public funding.

### **Do you think, or why do you think the tailor-made agreement has come into place with Tata Steel specifically?**

I would give a political answer, and I would say this is something that was in the coalition agreement, this tailor-made policy, that then the Ministry of Economic Affairs had to implement. And they started to talk with Tata Steel. So then it came into effect. And the question comes, why was it in the coalition agreement? And I think this was originally an idea of the CDA, of the Christian Democrats. If I remember correctly, it was also in their election program that they wanted to do this. They used this in the coalition negotiations. And so then you should trace it to why the CDA got this.

### **Do you think Tata Steel would become sustainable without the tailor-made agreement?**

So what I know now about it is that they have this India parent company, but they are of Dutch ownership. I think that the proponents of this tailor-made policy say, if we just regulate them, they are gone. They go somewhere else. And the opponents say like, no, they are not. They can't go somewhere else because they need the highly educated people that we have in the Netherlands.

And then the other people say like, yeah, but they don't need to go to India. They could also go to another, like Germany, where they're also afraid. And then the other people say: but they can't just move a plant so easily. So they actually want to stay. So they can't threaten it. But then your question was, would they become green without it? So, no, I think without any government policy, they would not be green. They would only become green in the next decades. They would only become green when there is other competition from other steel companies that become green. And then the kind of standards changes. Then they have to. So then there's market pressure. But I think that comes too late. So you'd need to do something as a government, either by regulating them or by doing it with the tailor-made policy. And I'm a bit agnostic about which of the two or if it's really necessary to give them tailor-made agreements.

**So you would put them in the second vision of the visions that you mentioned, that being that the company doesn't care about becoming sustainable inherently and they do it mainly for innovation or to get a competitive advantage?**

No, not necessarily. I think you could also argue that they now don't do it because they are hesitant about their competition. And they would only do it once the competition is also doing it. But they do want to become green. My hunch would be, but I'm not sure about this, is that there's inside Tata Steel also a discussion about this. And that there's people at Tata Steel who really want to green up. The people that work there are highly educated. And we know that highly educated people have more greener preferences. So I think that there's lots of people working there that actually want to green. But also people that maybe don't care. Or people that do care but are risk-averse. So I think that both of these kind of positions probably are present within the company as well.

**What was in your opinion the factor that led to these changes surrounding Tata Steel or the changes to Tata Steel?**

Definitely more attention to the health. The health risks there was this RIVM report at a certain moment and then yeah it would be nice to kind of see if that also if there's actually what the public opinion on Tata Steel was but before I think only people around Tata Steel cared and then suddenly everyone knew about the cancer so that's yeah and that makes that politicians also care at a certain moment yeah so they started to care and then also the province is suddenly thinking that people are not looking what we're actually doing if we're monitoring enough. I can't tell you what the public opinion was actually about when I actually found out. More health reports were published, definitely that's why it's got higher on the public agenda

**Do you think information or media salience led to more pressure or the combination?**

I think that in order to get the media attention, you need something that's new. And there this information plays a role. Here I always follow this classic agenda setting theory that says, in order to get something on the agenda, you need something that's new. So you need to first gain attention. And how do you do this? With something like: everyone gets cancer. That sounds a bit cynic, but that's what draws people's attention. But this information not only draws attention, but also makes sure that you have a claim on

why the government should act. So you're claiming authority because the government is there to protect its people. This is the theory by Sebastian Princen about agenda setting.

**Do you think green policy interventions for Tata Steel can effectively create a healthier living environment?**

In the long run, yes. But it depends. If you also say that carbon capture storage is green, then no. Because then you just have the same production process, but you just capture it in the end. But the way they want to do it now with the green steel makes that you have to burn less of these cokes. But that takes a long time. If you want to have effects now, you should take other measures, like making them close parts of the plant.

**Do you think that's a realistic solution? That they will close a part of the plant?**

No. I think it would be a realistic solution if there would be another report that has even worse numbers. But at the moment, I think there is still enough supporters to keep it open.

**Which societal pressures do you think influence policy makers to shift their stance towards key large industrial policies or industrial companies?**

I think it depends a little bit on which policy maker you look at. So I would say that we know from research that people from the Ministry of Finance or the Ministry of Economic Affairs have more contact with people in business. Because that's just also the group they regulate. Whereas the environmental ministries are also more in contact with their natural partner, the Greenpeace, Klimaat en Ordeel, those NGOs. And I think you see the same with political parties, that the people within the political parties, so the people that are in the committee of the Tweede Kamer that are dealing with environmental issues, will also talk more to environmental experts or health experts, whereas the people in the economic affairs committee are talking more to the companies. So I think it depends on which societal groups you look like.

**Some are more important, and importance is defined by the ministry itself, you think, or the party itself, depending on what their views are?**

Yes. I think especially when a case has such a high salience as this, then it's very much about party ideology and what we think is most important, and then they talk to the interest groups that actually, that support that, and maybe they also talk to the others, but more to hear what they have to say. There's a theory that says that but under low salience, interest groups have a lot of influence, because then political parties don't care so much, so they can just supply their expertise. But when a case is high salience, then political parties do care a lot, because they want to have the votes, or they don't want to lose face. They want to keep their reputation. Then they will consider what their voters will want them to do. So then they're more led by their ideological views.

**Why do you think green industrial policy is upcoming in the Dutch steel sector?**

I think it's a larger trend, so you see it also in the European Union level, also other countries are now doing this. This is five or ten years ago, industrial policy was nowhere to be found, and then now we're suddenly doing it. Also has a little bit to do with the United States, that it's suddenly doing it. A lot of policymakers are realising, that if they want to reach these climate goals, then they can try to push through regulation, but companies will just lobby so hard against that, that's not going to help. Let's do the carrot approach. Matteo Mildenberg showed this in the United States quite well, that in both the left and the right there are such vested interests for the coal and industry in general, that it's really hard to push through regulation. So this is kind of the only option left. And then the question is, why now? Well, I think just climate gets higher and higher on the agenda, so there's more and more regulation, so the firms are also squealing more and more.

**Do you think that mobilisation, salience, information need to be present to exert pressure on the policy-making system?**

I'm just thinking again about this theory I know of, or that I often use. And I would say, yes, of course, capacity is important, because salience is not exogenous. It doesn't suddenly get something on the political agenda. In order to get this on the political agenda, you need people that actually put their energy in this. If that's mobilising thousands of people in a demonstration, or if it's just 10 people with very dense networks, that maybe depends on other factors. But I think you need that in order to get these other two factors. And the other way around, I think also that once these reports from the RIVM came out, that again helped to mobilise a lot of people.

**Coming back to what you previously said about that industrial policy being more present now since the past couple of years. Why exactly is that?**

So next to that, it's just more vogue to do. This more geopolitical argument that we need to make sure that Europe is less dependent on China. So we need to be able to produce our own industrial stuff. So let's make sure that we support them. That could also be a case. So that's the more geopolitical reason. So again, there's a nice geopolitical story here. So you can get the policy makers that are more realists on board. You get the climate people on board. It's a policy that a lot of people can support somehow. I think it brings a lot of people together. And then now it makes me wonder, who did the first industrial green policy? I'm not sure if we are the first one in the Netherlands, probably not...

**What do you mean by the first industrial policy?**

So one of my arguments here is it's this kind of like a policy contagion or diffusion. One country is doing it. And then other countries follow also because it gets kind of like it's a trend. But then my question would be, okay, but why does this first mover started with it? So who was the first in the last 10 years that brought this back as a viable policy option again? But overall, policy diffusion is trendy at the moment. And with regards to support, that can bring a lot of people. So once it's on the table, people will support it.